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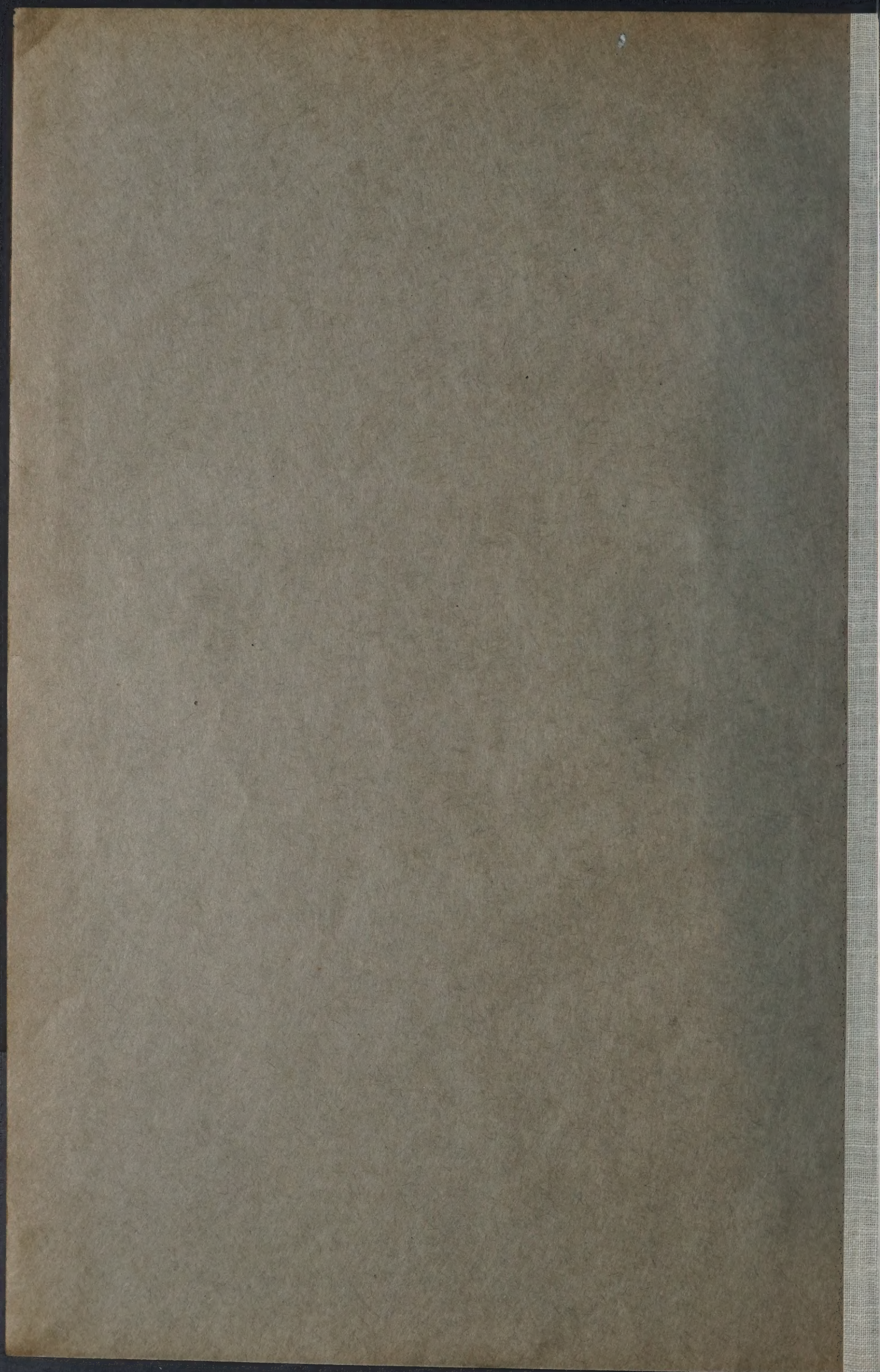
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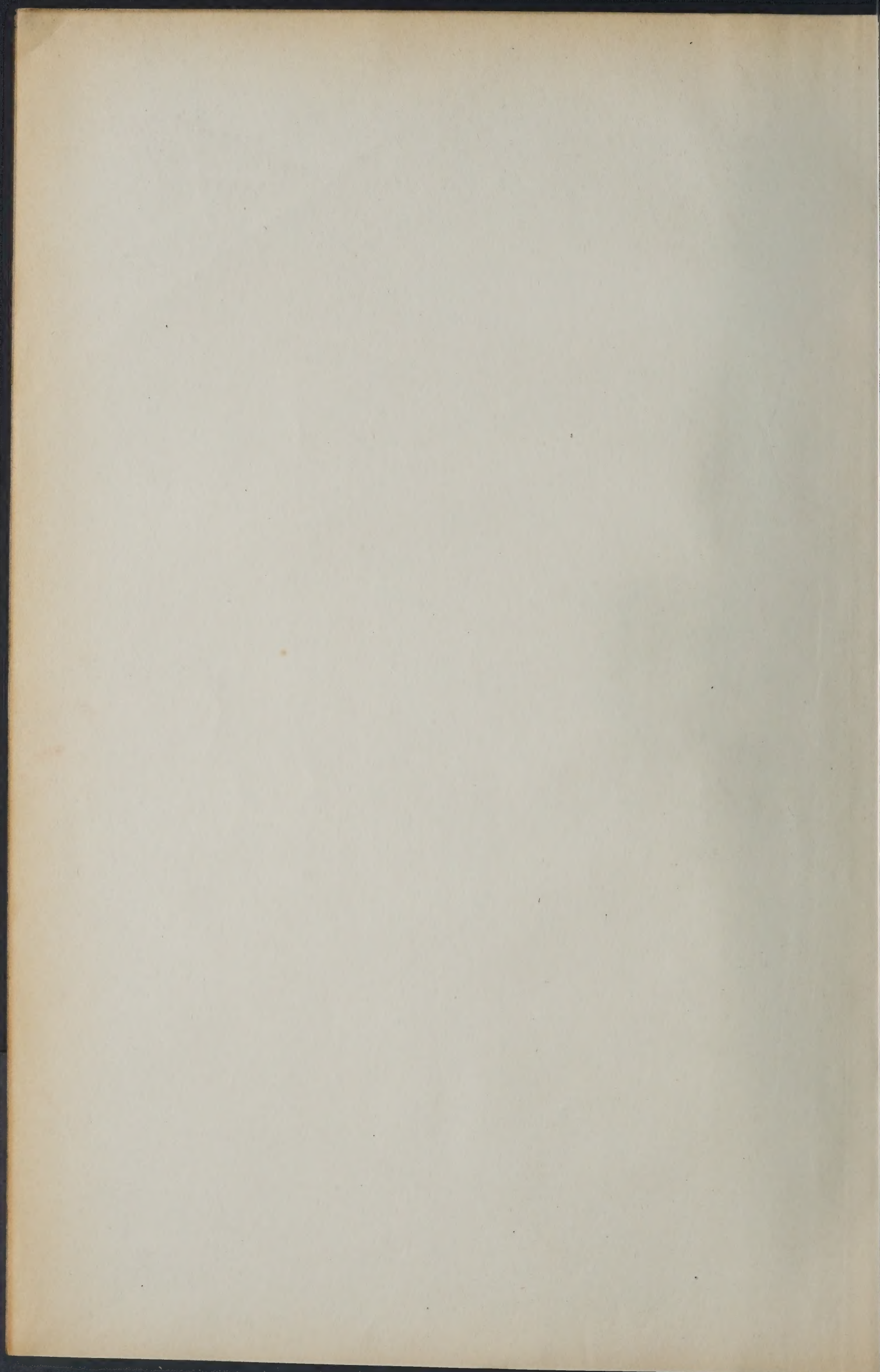
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THE AEROPLANE—JULY 7, 1926.

THE SEVENTH PAGEANT.

THE AEROPLANE

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AL ENGINEERING

Edited by
C. G. Grogg

Vol. XXXI. No. 1.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

AT THE ROYAL AIR FORCE DISPLAY.



THE ROYAL ENCLOSURE:—Their Majesties the King and Queen, accompanied by the King and Queen of Spain, and attended by the Ladies and Gentlemen of the Households in Waiting, honoured with their presence at the Royal Air Force Display, at the London Aerodrome, at Hendon, on July 3. The Royal Party from left to right are:—Sir John Salmond, Air Officer Commanding-in-Chief, Air Defences of Great Britain, Her Majesty the Queen, Sir David Hoare, Secretary of State for Air, His Majesty the King, Sir Hugh Trenchard, Chief of the Air Staff, His Majesty the King of Spain, His Royal Highness the Duke of York, Her Majesty the Queen of Spain, and Sir Philip Sassoon, Under Secretary of State for Air.

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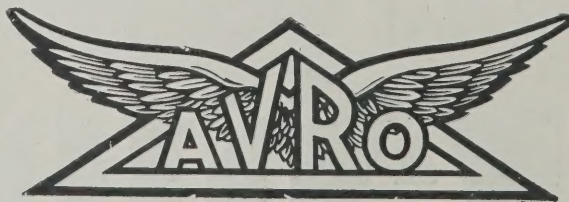
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ON THE ROYAL AIR FORCE DISPLAY.

Saturday, July 3, was an ideal Pageant day from the spectator's point of view, though, perhaps, not so pleasing to the pilots. The sun was hot and brilliant, in spite of its being the last day of Henley Regatta, and everybody was able to turn out in their prettiest clothes. And there were enough clouds about to give people's eyes a rest once in a while. But the same brilliant sun and clouds together with a fairly strong North-East wind made the air very bumpy and so the formations were not so close nor as regular as they were in the previous year when there was a beautifully level grey sky without a bump in it.

Nevertheless the flying was quite up to the best R.A.F. standard and in many ways it was more interesting than any previous show because we were able to display the fact that we have got some few really up-to-date aeroplanes. The performance was nothing like so much a review of past grandeur as have been most of the previous Pageants, wherein relics of the so-called Great War did most of the flying.

A MILD GRUMBLE.

In spite of this the Display lacked something in comparison with preceding Displays. There were fewer events, but they took longer. And, though everything was run off with clockwork regularity, there were longish waits between events, owing apparently to some of the performances getting through rather sooner than was expected, or owing to the need for keeping the aerodrome clear while machines got into position for the next event.

Those intervals might very well have been filled in by comic relief of some sort. There was no crazy flying to entertain the crowd, but the Auto-Giro and the Pterodactyl each provided combined interest and amusement enough to prevent people from becoming bored during the waits.

What ought to have been quite one of the most interesting shows, the Fly-Past of the new and experimental machines, was spoiled by the way in which it was arranged. The Royal Box being at the top of the hill, instead of down by the R.A.F. Club enclosure where it has been in previous years, the machines did not fly in a Southerly direction close along the lines of the fencing as hitherto, but came in from the South of the Royal Box and from behind it, right across the middle of the aerodrome, where they were much less impressive and much less spectacular and much less visible than they have been in the past.

As a matter of fact they might just as well have been made to fly from North to South where the King and his guests in the Royal Enclosure could see them coming all the length of the aerodrome, and could see them pass to the left. That

would have been very much better than having them come in from the back and almost over the heads of the said guests, who, if they were sufficiently interested to watch each machine coming by, must have had severe cricks in their distinguished necks.

THE CAR TROUBLE AGAIN.

The crowd at Hendon seemed bigger than ever, and there were certainly many hundreds of cars more than at any previous Pageant. All this part of the show was excellently managed. The cars were parked by the R.A.F. themselves, without any interference by the police, so everything went quite smoothly. But there was a good deal of difficulty about getting out, because Colindale Avenue was very wisely reserved for foot passengers going to the tube station and to the 'buses and trams on the Edgware Road. The difficulty of getting away with cars was caused entirely by outside circumstances.

The road round by Mill Hill was blocked by road-making operations, so all the traffic had either to go up Hendon Hill to the South-East, or round by Montrose Avenue, to the North-West and into the Edgware Road, where, after turning South, all the way down from the end of Montrose Avenue to Colindale Avenue the pace of the lines of cars was regulated by the loading of trams and 'buses near the end of Colindale Avenue out of the tram depot.

The police authorities, as stupid as ever, instead of allowing the cars to pass the stationary trams and 'buses on the right-hand side, wasted the time of some hundreds of patient and good-natured police constables who had to stand between the tramlines keeping the right-hand side of the road absolutely empty of traffic, although there was hardly any traffic going out of London at that time of the day. Even after one got past Colindale Avenue, one's speed was still limited by the trams and 'buses and the line of policemen, and it was not till one got past the Welsh Harp that the traffic was able to open out and spread over the road and accelerate.

The London policeman individually is one of the most sensible people in the World. But the particular Department which regulates traffic of this sort always seems to make a mess of it.

THE DISPLAY THAT WAS WASTED.

Officially the Display began at noon. And by that time there was already quite a large crowd both on foot and in cars.

The first thing to happen was the start of what is called a Long Distance Reliability Trial. Three squadrons of night



PART OF THE CROWD.—A view looking down the hill towards the Amusement Park.

624022

bombers, No. 7 from Bircham Newton under Wing Cdr. Blount, No. 9 from Manston under Wing Cdr. Gaskell-Blackburn and No. 58 from Worthy Down under Sq. Ldr. Harris, all on Vickers Virginias (Napier Lions), and No. 99 from Bircham Newton under Sq. Ldr. Ryan on Handley Page Hyderabad (Napier Lions) started off to circumnavigate most of the South and South-East of England in formation.

One imagines that it must have been as much a trial of patience as anything else, for the personnel of the squadrons had to leave before the show began and finished at about 18.30 hours when the show was all over. The result was that the vast majority of the enormous crowd missed seeing what might have been one of the most impressive events in the programme, namely, the start and the landing of the big bombers.

One cannot help thinking that for the purposes of demonstrating our Air Power to the British taxpayer these machines might have been put to a better purpose. Especially as these squadrons do journeys of this sort about twice a week.

The first formation home were the Hyderabad of 99 Squadron. No. 7 Squadron was second, 9 was third, and 58 was fourth.

THE CO-OPERATORS.

The second happening was the usual demonstration on Bristol Fighters by Army Co-operation Squadrons of picking up messages from the ground and delivering answers.

The winning Squadron was No. 13 from Andover, commanded by Sq. Ldr. Durston; with No. 4 Squadron, Farnborough, under Sq. Ldr. Slessor, second; and No. 16 Squadron, Old Sarum, under Sq. Ldr. Coryton, third. Presumably Bristol Fighters will take part in this competition for a good many years to come, seeing that a replacement type has not yet appeared.

AEROBATICS.

After that came the lunch interval, from 13.00 hours to 14.30, during which a display of aerobatic flying was given. Flg. Off. Atcherley of 23 Sqdn. (Henlow) flew a Gloucester Gamecock (Bristol Jupiter engine); Flg. Off. Waghorn of No. 17 Sqdn., Hawkinge, flew a Sopwith Snipe (B.R.II engine); Flg. Off. Rhind of No. 111 Sqdn. flew an Armstrong-Whitworth Siskin (Armstrong-Siddeley Jaguar engine); Plt. Off. Armour of No. 111 Sqdn. flew another Armstrong-Siskin-Jaguar and two R.A.F. pilots (unnamed) flew the Gorcock and Hornbill respectively.

All showed themselves to be thoroughly competent pilots. Their slow rolls and loops and spins and so forth were all executed with impeccable accuracy. And they all demonstrated that the standard of flying in the R.A.F. is being thoroughly maintained. All the pilots, as may be noted, were of quite junior rank, without war decorations, and may be taken as typical of the younger generation of pilots.

Mr. Atcherley did at least one very pretty feat. After a dive he drove his machine practically vertically upwards, did a complete spin while on the upward path and flew off the spin horizontally. One has seen an American pilot do two upward spins in that way and then fly out horizontally from the top of the second spin, but one gathered that it was not standard practice even in America. Mr. Atcherley's rolling at a low level was particularly neat.

THE FIGHTER SQUADRONS.

After lunch came the first event of the programme proper, Group Evolutions by Fighting Squadrons. These Squadrons were No. 19, Duxford, Sq. Ldr. Jones, on Gloucester Grebes (Armstrong-Siddeley Jaguars); No. 23, Henlow, Sq. Ldr. Collishaw, on Gloucester Gamecocks (Bristol Jupiters); No. 29, Duxford, Sq. Ldr. Neville on Gloucester Grebes (Armstrong-Siddeley Jaguars); No. 32, Kenley, Sq. Ldr. Lale, on Gloucester Grebes (Armstrong-Siddeley Jaguars); No. 41, Northolt, Sq. Ldr. F. Sowrey, on Armstrong-Whitworth Siskins (Armstrong-Siddeley Jaguars); and No. 56, Biggin Hill, Sq. Ldr. Vincent, on Gloucester Grebes (Armstrong-Siddeley Jaguars).

The Squadrons were divided into two wings of three squadrons each and as each squadron consisted of nine machines there were 54 machines in the air at once, which is one believes a record for R.A.F. Pageants. The flying of these squadrons was excellent. They kept formation well in spite of the bumpy air, and the effect of the fifty-four machines all in the air at once was quite impressive.

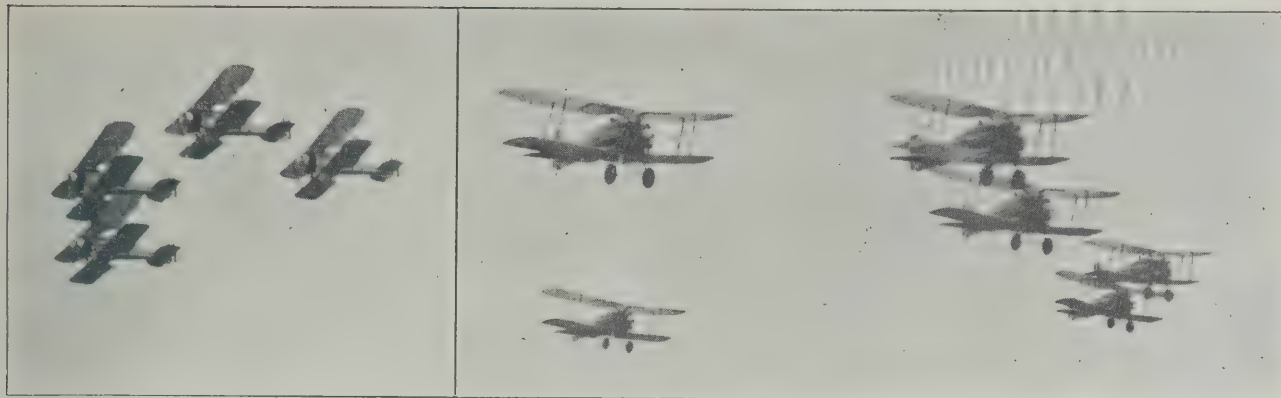
DEMONSTRATING THE DIRECTORATES.

Event No. 2 was a Handicap Race of about twenty miles open to the Directorates of the Air Ministry on any Service type of single-engined aeroplane. This race is an excellent idea, for it demonstrates, not merely to the British Public, but also to the Flying Officers of the R.A.F., that the people who sit on office stools in the Air Ministry, can also fly. The ranks of the pilots are also interesting as showing that quite senior officers can still hold their own in the air.

The race was won by Sq. Ldr. Cox, of the Directorate of Organisation and Staff Duties, on a Hawker Woodcock (Bristol Jupiter). The second was Flt. Lt. Waring, of the Directorate of Operations and Intelligence, on an Armstrong-Whitworth Siskin (Armstrong-Siddeley Jaguar). The third was Air Commodore Longmore, of the Directorate of Equipment, on a Fairey Flycatcher (Armstrong-Siddeley Jaguar). The other competitors were Wing Commander Sholto Douglas, of the Directorate of Training, on a Hawker Woodcock (Bristol Jupiter), Sq. Ldr. Bengé, of the Directorate of Personal Services, on another Hawker Woodcock, and Sq. Ldr. Sir Quentin Brand, of the Directorate of Technical Development, on a Gloucester Gamecock (Bristol Jupiter).



FORMATION FLYING.—Assorted attitudes of the various Single-seat Fighter formations.



EXHIBITIONERS.—The flight of 19 Squadron (Gloucester Grebes, Jaguar engines) which bombed the Tank, and (Gloucester Gamecocks, Jupiter engines) of 23 Squadron landing.

Air Commodore Longmore was one of the first three naval officers who ever flew and was flying quite well when THE AEROPLANE came into existence in 1911, and he is in the first flight among hunting men and as a point-to-point rider. So really his show as an aeroplane pilot is quite remarkable. The flying in this event was remarkably good all the way round. The pilots took their corners with all the dash and skill of professional racing pilots.

THE BIG PARADE.

Event No. 3 was, from the technical point of view, actually the most interesting of the day, because, for the first time on record, we really had some new machines to show which were not already well-known to everybody concerned with aviation. Moreover we were able to demonstrate that if we do not hold World's records for speed we have at any rate four single-seat machines of the very highest class, which one believes may be claimed to be the fastest fighters in the World.

It is quite worth while to give a catalogue of the sixteen machines which appeared with a few brief comments on each.

No. 1 was Captain G. T. R. Hill's Pterodactyl with its 34 h.p. Bristol Cherub engine. Regular readers of THE AEROPLANE know just about as much as there is to know about the Pterodactyl. One may repeat that the word means "Wing-fingered." The machine looks like the pre-historic flying animal of that name. And its controls are in the tips of its wings and are rather like fingers.

It certainly is a very interesting production. In the air it is as comic as an Avro flown by Flt. Lt. Noakes. And it does demonstrate that it is absolutely controllable and unshakable. But there are plenty of ways of making an aeroplane of normal appearance equally so.

One cannot believe that a machine of this particular type can be developed for high-speed fighting. But it does strike one that it has immense possibilities for flying-boats of large size, in that the rudders under the wings might be made in the form of wing-tip floats, and the general design would do away with the heavy after part of the hull and the negative tail-plane which wastes so much power in flying-boats, though it is the one thing which makes them flyable.

Flt. Lt. Chick certainly got as much fun out of flying the machine as the spectators did out of watching it.

PROGRESS.

No. 2 was the Blackburn Sprat, fitted with a Rolls-Royce Falcon III engine of 270 h.p., an extremely neat training machine which can be used either with floats as a seaplane or with a wheel undercarriage for deck landing. It showed itself to be a real flying machine, answering its controls beautifully.

No. 3 was the Vickers Vendace, also with a Falcon III engine. This is the opposite number to the Sprat and showed that it also has a very good performance.

When one recalls the queer things on which our naval aviators had to learn sea-flying in the past, one realises that on the training side at any rate in these two machines real progress is being made.

THE SPEED FIGHTERS.

No. 4 was the Gloucester Gorcock with Napier Lion VIII engine (direct drive) of 525 h.p. This is one of the four new single-seat fighters, and a very nice job it is. It does not look as fast as does its three rivals. But that can only be proved on actual test. It is certainly a splendidly made machine and handles well.

No. 5 was the Hawker Hornbill with a Rolls-Royce Condor IV of 700 h.p. It is the first speed machine to have a direct-drive Condor in it. With such a big engine one hardly expects manoeuvrability, though one can expect speed, and in the Hornbill one certainly gets it. But Flt. Lt. Saint who was flying the machine showed that it could do most of the things to which scout pilots are accustomed. In fact he gave a brief display of aerobatics which was about on a par with that given by slower machines during the lunch interval.

No. 6 was the Avro Avenger, Napier Lion VIII engine of 525 h.p. The Avenger is one of the cleanest jobs one has yet seen. And it is also certainly one of the fastest machines. Mr. Chadwick, Mr. Parrott and everybody concerned with it may well be proud of it.

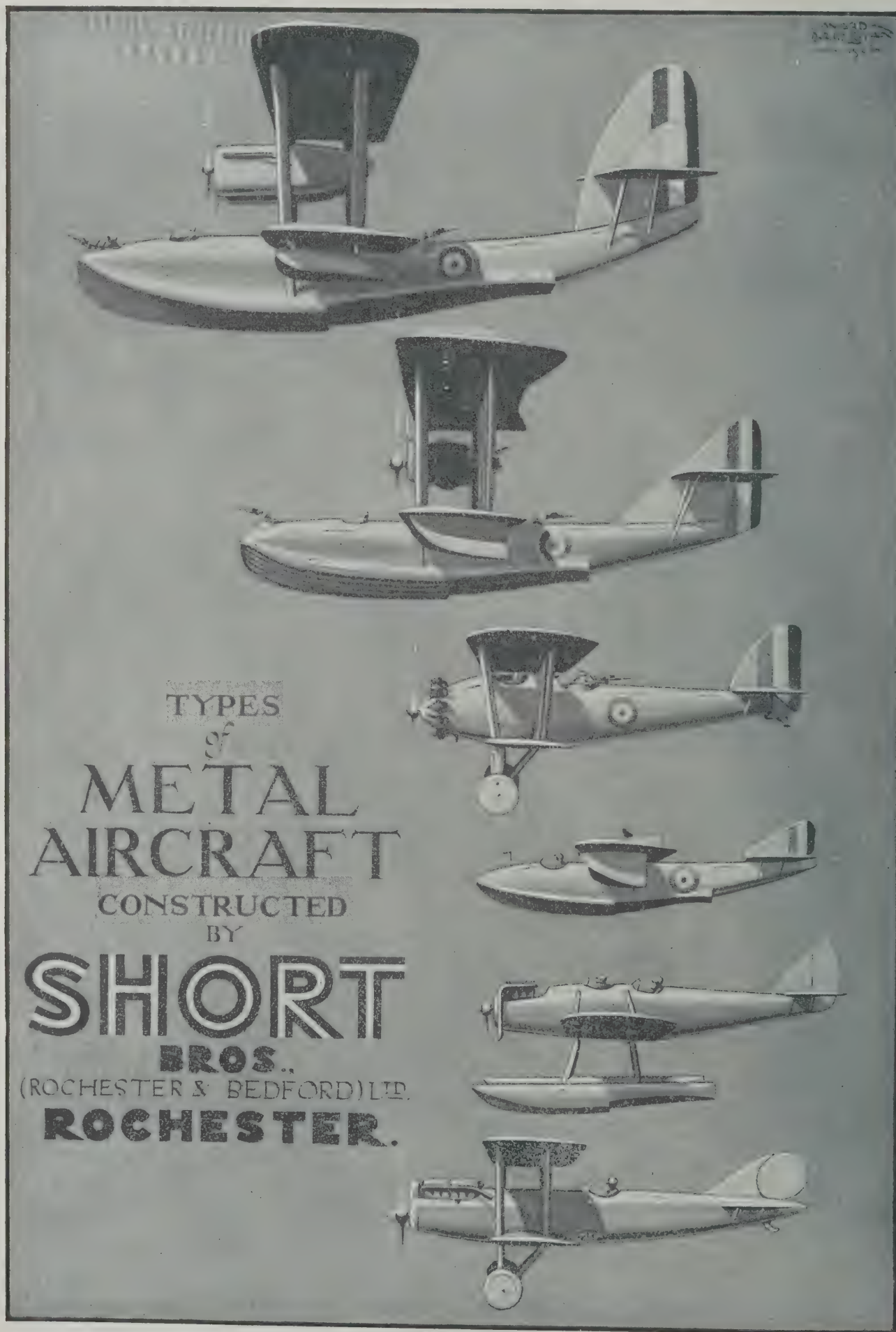
No. 7 was the Fairey Firefly with the Fairey Felix (or Curtiss D.12) engine of 430 h.p. The Firefly embodies everything which is best in the Curtiss and Fairey design and construction. Its lines are simply lovely and in the air it is a perfect picture of what a speed aeroplane should be.

The Firefly, the Avenger and the Hornbill are believed to be the World's fastest fighting machines. Most of the R.A.F. people with whom one has talked seem to assume that the Firefly is the fastest. But the makers of the Avenger and the Hornbill each believe that their machine is just as fast or even faster. And each seems to be ready to back his opinion.

Mr. Fairey, who is always ready to show reason for the faith that is in him, has made an open offer for the Firefly to race any of the other speed machines carrying its full military equipment over a 200-mile course for a stake of £1,000 a side. One hopes that such a contest will be arranged and that the Air Ministry's technical experts will not stand in the way of such a thoroughly sporting event, for one believes that both the Hawker people and the Avro people will be willing to put up the money for a match.



SQUADRON FORMATION.—Gloucester Grebes in the standard Squadron Formation of the R.A.F. Three Vees in Vee form—known as "Vic" formation, for purposes of radio-telephony.



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FLYING PAST.—Left to right, the Avro Avenger (Napier engine); the Fairey Firefly (Curtiss engine); and the Gloucester Gorcock (Napier engine).

It would be all together for the good of the Air Force to have a definite proof of what the new fighters will actually do under something like Service conditions. And it will also be possible to see whether it is possible with 430 h.p. to equal or beat 525 h.p. and 700 h.p.

It is well to remember in any case that the Curtiss D.12, as fitted to the Firefly, is now regarded as an obsolete engine in the States, and is being replaced by the Curtiss V.1400, which gives considerably more horse-power for rather less area and rather less weight.

MORE AND NEW CO-OPERATORS.

No. 8 was the Armstrong-Whitworth Atlas with Armstrong-Siddeley Jaguar IV engine of 385 h.p. This is an Army Co-operation machine. It has done quite a good deal of flying lately, both in its complete military form as the Atlas and in a more or less civilian form as the Ajax, in which shape it competed in the King's Cup Race last year and showed a very fine turn of speed.

No. 9 was the Bristol Boarhound, Bristol Jupiter VI engine of 425 h.p. This also is an Army Co-operation machine. It shows its descent from the good old Bristol Fighter but it is an entirely new creation of Capt. Frank Barnwell's throughout, and in the air it seems to be a very attractive flying machine. Its detail design, based on the need for access to Air Ministry gadgets, is most interesting.

No. 10 was the de Havilland Hyena with an Armstrong-Siddeley Jaguar IV engine of 385 h.p. This machine flew very well indeed during the Dress Rehearsal on Friday, but in taking off for the Parade on Saturday apparently the engine cut out and it landed on the far side of the railway bank, fortunately without doing any damage so far as one could gather. It has a good deal of the look of a D.H.9a with a radial engine put into its nose.

No. 11 was the Vickers Vespa, Jupiter VI engine, 425 h.p. In this Mr. Pierson has endeavoured to give the pilot good visibility by staggering his lower plane a long way back and putting it a good bit below the fuselage, in the manner of the old Bristol Fighter. And he has brought the upper plane close to the top of the fuselage and has cut it away

to make room for the pilot's head. The machine is quite a good constructional job of work and seems to fly well.

These four machines are the latest effort to replace the Bristol Fighter. Whether they will ever get the all-round performance of the Bristol Fighter, when loaded down with all the gadgets on which the Air Ministry experts insist in these days, remains to be proved.

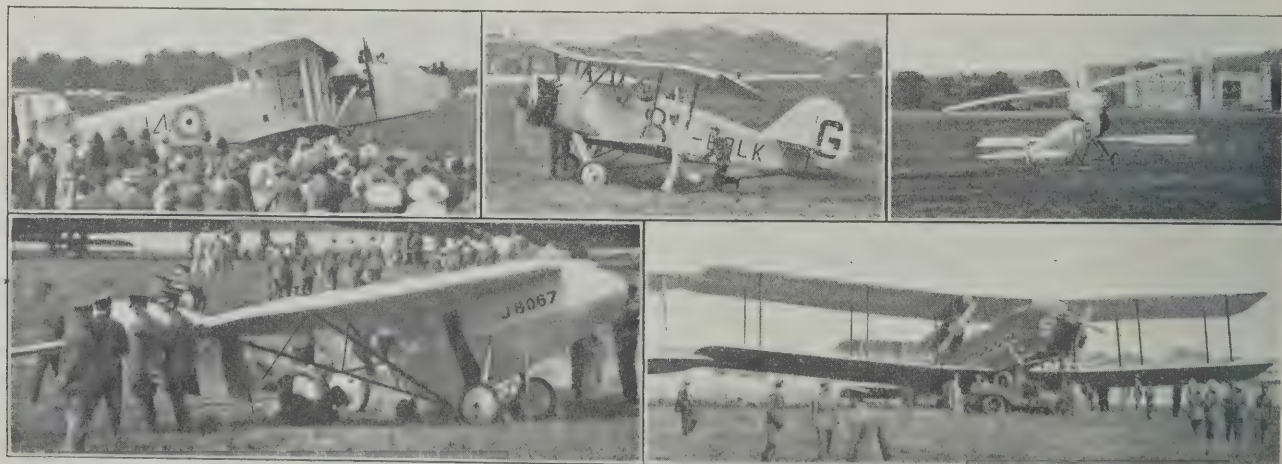
Certainly they are all very much faster than the old Bristols. But for Army Co-operation work speed is not everything. When a machine has to pick up messages from a small field in a narrow valley, climb and manoeuvrability are worth a great deal more than mere speed. So in this case the fastest machine may not necessarily be the best for the purpose.

DAY BOMBERS.

No. 12 was the Fairey Fox with Fairey-Felix-Curtiss engine of 430 h.p. The Fox deserves to go down to history as one of the machines which has altered, and almost revolutionised, our aviation.

After Mr. Fairey imported the D.12 engine and Curtiss ideas of fuselage shapes and wing sections and so forth in 1923 one wrote an article "On Improving the Breed" of British aircraft and suggested that he might perform the same service for British aeroplanes as was performed by the unknown sportsman who imported a Turkoman horse after one of the Crusades and produced the British thoroughbred. That article made one frightfully unpopular, and attempts were made by interested parties to get the Aircraft Trade to cancel their advertisements in *THE AEROPLANE* and thus ruin the paper.

But one had the courage of one's convictions and Saturday's Pageant proved that not only were one's opinions right but that by emphasising the need for improvement in our designs one was actually doing a service to British aviation in general and to the Royal Air Force in particular. One has always had a particular affection for the Fox ever since one saw the first outlines of her, and the first mock-up of the fuselage. And now one feels that everything one has thought and said about the machine is more than justified.



SAMPLES AT THE PAGEANT.—Top row, the Avro Ava (two Rolls-Royce Condors); the Armstrong-Whitworth Ajax (Siddeley Jaguar); and the Cierva Auto-Giro. Bottom row, the Hill Pterodactyl; and the Armstrong-Whitworth Argosy.

Napiers still lead!

"One of the most remarkable performances ever put up by aircraft of any nationality"

Thus 'Flight' of 24th June, 1926, describes the flight by four Royal Air Force Fairey machines, each fitted with a single Napier engine, under the command of Wing Commander C. W. H. Pulford, from Cairo to Cape Town and back to Cairo and England.

Attention is called to the fact that—

The Napier engines were standard, being taken from Stores as for ordinary Service use.

The number of engine miles flown was 56,000.

No engine was changed during the whole flight.

No mechanical trouble of any description was experienced.

Machines flew in formation and kept to prearranged schedule times throughout.

Flight carried out through tropical heat, rain and sand storms.

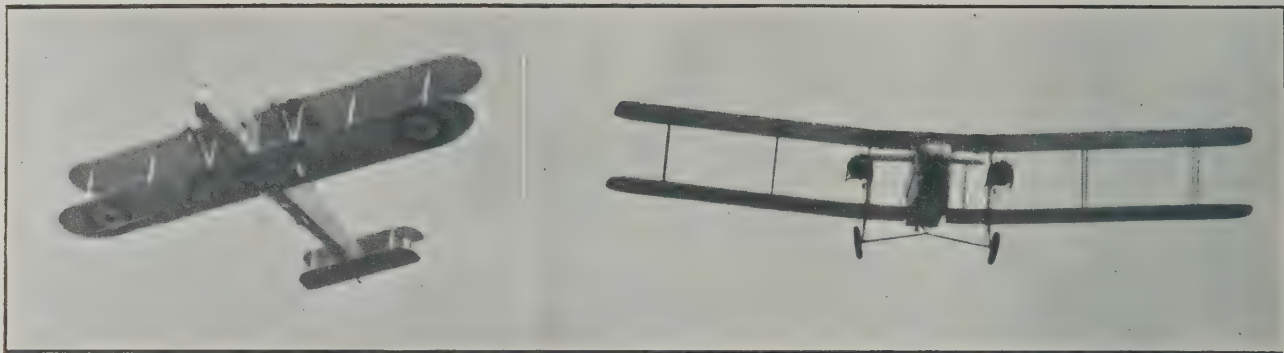
For the first time on such a flight no difficulty was experienced in leaving high altitude aerodromes in rarefied air with fully loaded machines.

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THE BIG FELLOWS.—The Avro Ava (two Condors) and the Armstrong-Whitworth Argosy (three Jaguars).

When the Fox made her first public appearance at the Andover At Home about a year ago a very experienced war pilot said that she was the first real aeroplane that he had seen since the German Albatros during the War. Some pilots said that she was too fast for the ordinary pilot to handle. Sir Hugh Trenchard, overruling all opposition, simply ordered a squadron of Foxes and said that the pilots had to learn to fly them. And to-day a squadron of Foxes is in process of formation.

The Air Ministry decreed that the Fox should be a day bomber because she is able to carry the same load of bombs as does the Fairey Fawn, and owing to her speed she carries them the same distance in not much more than half the time, so that the effective range as a bomber is just as great as that of the Fawn. But personally one believes that she is almost the ideal two-seater fighter.

Stripped of bomb racks and equipped simply as a fighting machine a squadron of Foxes would be very nasty for any single-seat fighters to tackle. And in fact the only single-seaters which could ever reach the Foxes are our own new single-seaters and perhaps two American machines and about two French machines of the same class.

No. 13 was the Hawker Horsley, Rolls-Royce Condor III engine of 670 h.p., also a day bomber. The Horsley is another machine for which one has an immense respect. She is very fast near the ground but she is designed primarily for high-altitude flying to get her best performance in relation to other machines at 20,000 feet or so. She is so beautifully proportioned that at a distance she looks like quite a small machine. Mr. Camm her designer proved, in the Horsley, that he is quite in the front rank of designers. And of course with Mr. Fred Sigrist to look after construction and production the Horsley is bound to be a success.

THE BIGGEST BOMBER.

No. 14 was the Avro Ava with two Rolls-Royce Condor III engines of 670 h.p. She is labelled as a "night bomber and coastal torpedo land plane." This is quite one of the most successful machines ever built in this country.

During the dress rehearsal on Friday, something went wrong with a water-joint and, as an onlooker remarked, "all the bath-water fell out." Anyhow the port engine disappeared in a cloud of steam when the machine was a few hundred feet up in the air in a most awkward position just turning down-wind over the Royal Enclosure.

Flt. Lt. Webster, who was the pilot, took the machine down-wind with the starboard engine only, turned her against the engine head to wind over Colindale Avenue, and then, finding that she was too high to glide into the aerodrome in the ordinary way, put the machine over onto her starboard

wing-tip and did a side-slip exactly like that of a school Avro. Then when he was low enough he flattened out and proceeded to do a "swish-tail" landing, also like a school Avro, and stopped within a few yards of touching the ground.

It was a wonderful piece of piloting in itself, but even the most wonderful pilot could not have brought it off unless he had been handling a wonderful machine. One does not expect a machine with over 1,300 horse power and a speed of something over 120 miles an hour to behave like a school kite. But that was exactly what the Ava did.

Of course she was flying dead light at the time. Her full load is one believes something over 2,000 lbs. dead weight of bombs more than that of most standard big bombers. So here we certainly do seem to have quite an exceptional aeroplane.

One gathers that, besides Mr. Chadwick and Mr. Parrott, Mr. A. V. Roe himself has had quite a good deal to do with the design of the Ava and one is glad to see that his ability as a designer has so long outlasted his pioneering period. In fact the Ava almost suggests that he is starting a new period of pioneering.

THE BIGGEST PASSENGER MACHINE.

No. 15 was the Armstrong-Whitworth Argosy, the new three-Jaguar machine designed for use by Imperial Airways Ltd. Pilots who have flown the machine say that she is singularly nice to handle and that she gets off very easily.

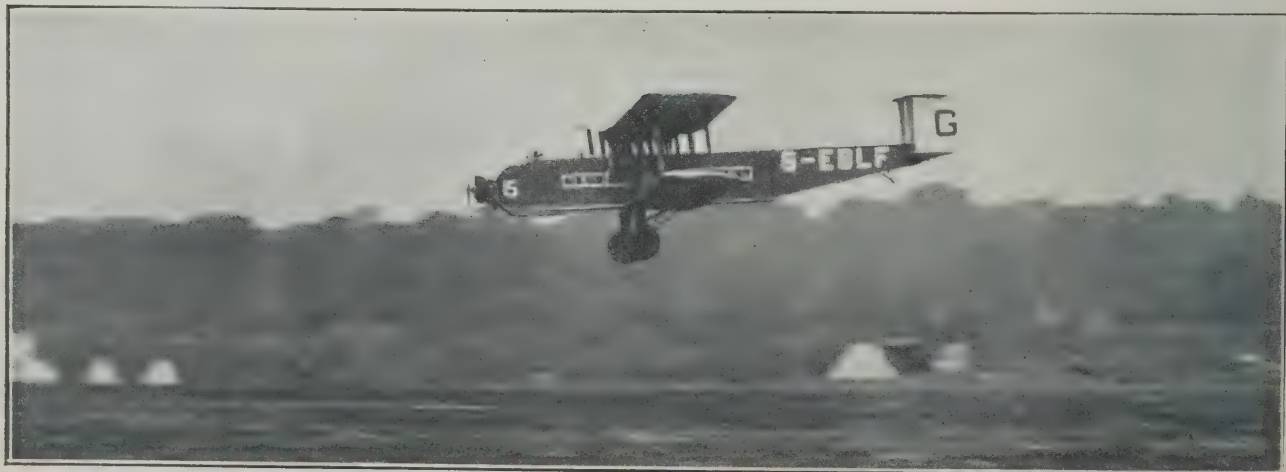
Her seating capacity is for twenty passengers. But her weight-carrying capacity is considerably more than is represented by the weight of twenty people. That is the worst of carrying passengers. No machine can ever carry its full weight of load, because passengers cannot be packed close enough.

The Argosy is, one believes, intended for use on the Cairo-Karachi route, and she is built largely of steel with fabric covering. One hopes that she will be used on European routes first just by way of demonstrating to our Continental competitors that we are advancing in our notions of passenger machines.

THE WHIRLIGIG.

No. 16, and last, was the Cierva Auto-Giro built by A. V. Roe and Co. Ltd., with a Clerget engine of 130 h.p. The machine was flown by Flt. Off. Frank Courtney, R.A.F. Reserve. When all the mere ordinary aeroplanes had returned to earth he and Flt. Lt. Chick on the Pterodactyl executed a little *pas-de-deux* in the air which was really the most entertaining part of the programme.

One young woman described the machines as "the two practical jokes." And they certainly looked like it. One's eye can become accustomed to anything, and possibly one may be-



GOING STRONG.—The Armstrong-Whitworth Argosy (three Jaguars), built for Imperial Airways Ltd.



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"THE PRACTICAL JOKES."—The Hill Pterodactyl chasing the Cierva Auto-Giro at the R.A.F. Pageant. Scientists regard them either as epoch-making inventions or as interesting intellectual exercises, whereas the more practical aviator still regards them as practical jokes. Who is right?

come accustomed to Auto-Giros and Pterodactyls. But unfortunately if one of them is right the other must be wrong unless somebody, even more ingenious, can produce a pterodactylic auto-giro with controllers at the ends of its gyrating blades so as to do away with what Capt. Hill must regard as the entirely unnecessary tail and ailerons of the Auto-Giro.

The idea is rather terrible to contemplate. And personally one believes that when somebody really takes the slotted wing in hand and makes a production job of it we shall get along quite well with our rigid wings and ordinary tail surfaces. Meantime one was grateful for the comic relief provided by this part of the performance.

WHAT WE HAVE GOT.

At any rate that Parade did demonstrate a few things which were worth while. Firstly it showed that we have got first-class single-seat fighters equal to or surpassing the best in the World. Secondly it showed that we have two-seater co-operation and bombing machines which are far in advance of anything that we have had hitherto. And thirdly it showed that we have got at least one extraordinarily fine heavy bomber and something which is an advance in the way of passenger-carriers. So at any rate we are that much to the good.

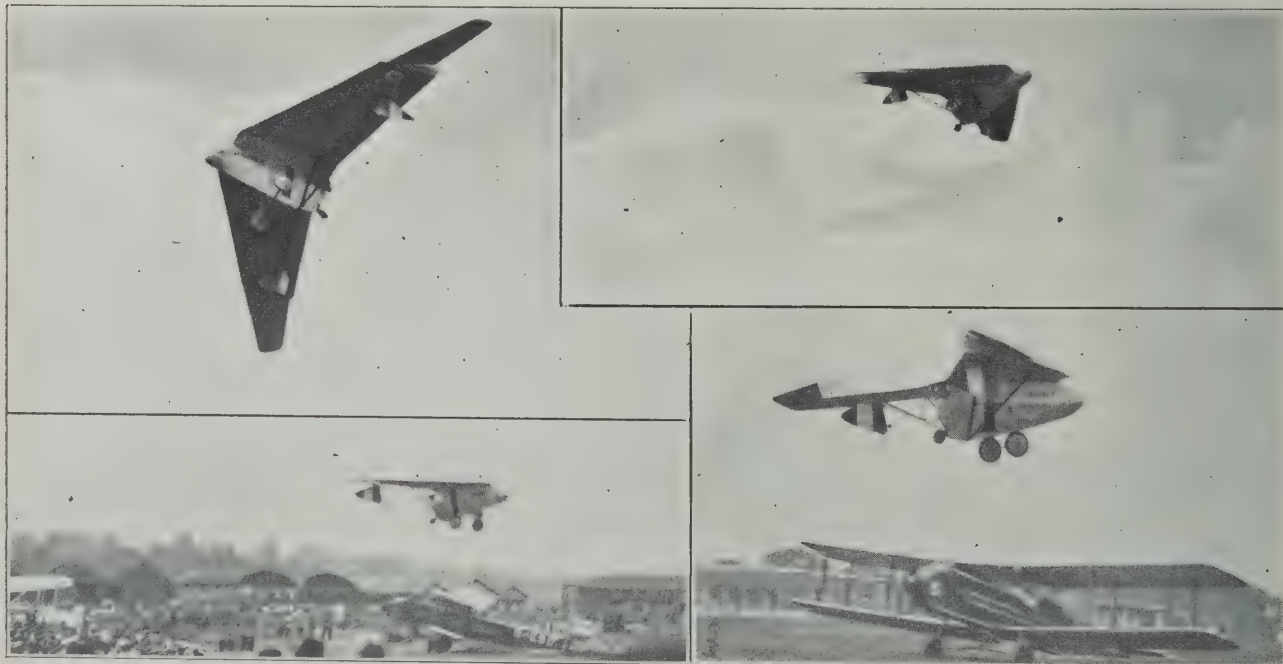
THE TANK-BOMBING.

Event No. 4 was a demonstration of Low Bombing by the

flight which won the Challenge Cup presented by Capt. the Hon. F. E. Guest, former Secretary of State for Air. The winners were a flight of No. 19 Fighter Squadron commanded by Sq. Ldr. H. W. G. Jones, M.C., at Duxford and mounted on Gloster Grebes with Jaguar engines. Sq. Ldr. Jones had injured his hand some time before so was unable to demonstrate his own particular methods of low bombing which caused such a sensation last year.

This year the target was a moving tank or rather an iron-clad mock-up of one, and it was towed across the aerodrome by a wire attached to a balloon winch. Owing to the necessity for keeping the wire out of the way of machines which were landing the target was towed across the North-East corner of the aerodrome instead of being planted straight in the middle as was the immobile target last year. Consequently the display was neither so visible nor so emotioning. At the same time, owing to the course taken by the machines there was rather less chance of a bomb-dropping mechanism making a mistake and giving an imitation of Bombing the Baker as No. 32 Squadron did at Kenley a few weeks ago.

In bombing of this kind no bomb-sights are used, and the bombs are released from a height of about 50 feet at the judgment of the pilot. In spite of this, and of the fact that the tank was moving at just about the pace of a real live tank, No. 19's four machines got four direct hits on the tank, which reached home with a distinct list to port. One mentions this because



THE COMIC RELIEF OF THE DAY.—Some attitudes of Flt. Lt. Chick's on the Hill Pterodactyl. Queer as it appears in the pictures, only a kinematograph could do justice to its quaint wallowing movements and its ludicrous squatting motion when landing.



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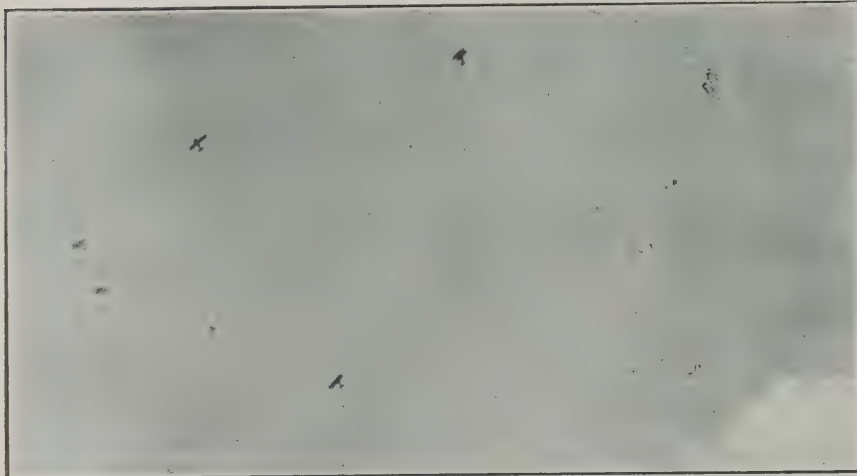
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the tank progressed for quite a long time spouting smoke from its roof and many people thought that this was a fake like the blowing up of the Set Piece.

THE RADIO-TELEPHONE MANŒUVRES.

Event No. 5 was the demonstration of the Command of Air Manœuvres by Radio Telephony. The demonstrators were No. 25 Squadron from Hawkinge commanded by Sq. Ldr. A. H. Peck, D.S.O., M.C., and equipped with Gloucester Grebes (Jaguar engines).

According to the programme the pilots were assembled on the aerodrome and the engines were warmed up but not running, so that the pilots had to get into the machines and the engines had to be started when the signal was given. If the machines had been stationed in the middle of the aerodrome instead of away up on the top of the Northern hill, as far as possible from the Royal enclosure, the start might have been more impressive.

But when the squadron got going there was no doubt about its efficiency as a squadron. The orders for the various manœuvres were given by the Squadron Leader himself to the machines. Also they were picked up by a ground station and broadcast by means of loud speakers which were stationed at various points round the aerodrome, some of which would have been more useful if placed differently. Perhaps the most effective manœuvre from the public point of view was when the squadron, after coming over the aerodrome in squadron formation, burst into a kind of Prince of Wales Feathers and came back into squadron formation by half-loops.

Of course nobody's diction is improved by a loud speaker but that long-drawn-out "Go" at the end of each order struck one as being particularly irritating. Its function in life is to do for the Air Force what the word "Marrch" does for the Army, namely to indicate that the ordered movement is to begin. Presumably it was chosen because the vowel sound transmits better by wireless than does any other. But to the unaccustomed ear it sounds very nearly as comic as would the alleged American Army order "Twos into fours!—Git!!" if substituted for our regulation "Form fours!—

BREAKING FORMATION.—The nine Gloucester Grebes (Jaguar engines) of 25 Squadron doing their "Prince of Wales Feathers" break-up.

Quick March!" Anyhow, 25's performance was quite one of the best things of the day.

THE RESERVISTS.

Event No. 6 was a race of about ten miles on Bristol Fighters, open to one officer of each of the training centres which carry out the annual training of officers of the Reserve of Air Force Officers.

The winner was Flt. Lt. W. W. Wakefield, the former skipper of the R.A.F. Rugger team, flying for the London Centre, which is run by the de Havilland Company.

The second was Flg. Off. Berlyn of the Coventry Centre, which is run by Armstrong-Whitworth Aircraft Ltd., and the third was Flg. Off. S. C. O'Grady of the Glasgow Centre, run by the Beardmore Company at Renfrew. The also-rans were Flg. Off. Jones of the Bristol Centre and Flg. Off. S. B. Atkinson of the Leeds Centre.

Why the race was flown on Bristol Fighters when the majority of the training is done on D.H.9s and machines of various other types is difficult to explain, except on the hypothesis that as probably none of the pilots had flown Bristol Fighters for years they were all on a par.

THE DAY-BOMBING SQUADRONS.

Event No. 7 was the big event of the day, consisting of a group of two wings of two Bombing Squadrons of nine aeroplanes each.

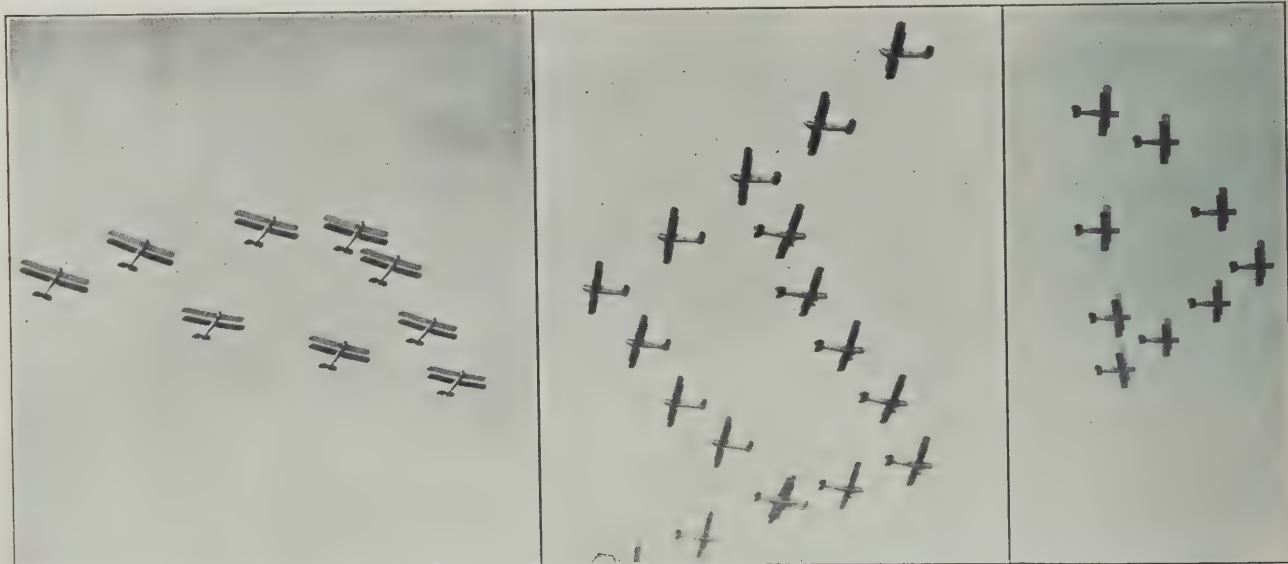
The four squadrons were No. 11 from Netheravon under Sq. Ldr. E. A. B. Rice on Fairey Fawns with Napier Lions; No. 12 from Andover under Sq. Ldr. T. E. Salt, also on Fawns; No. 39 from Spittlegate under Sq. Ldr. H. V. Champion de Crespigny, on de Havilland gas with Liberty engines; and 207 Squadron from Eastchurch under Sq. Ldr. J. B. Graham on D.H.9s with Liberty engines.

The four formations did all the regular aeroplane parades which at previous Pageants have been done by smaller formations. They flew in line abreast and line ahead and squadron formation and Vee formation. And they crossed over and under one another in opposite directions and so forth. It was all very pretty and very impressive, but it was not new.

THE BOMBING OF PEACEHAVEN.

Event No. 8 was the Set Piece. This time it was supposed to be an attack by fighters and day-bombers on an enemy aerodrome.

The aerodrome was quite a beautiful edifice in black and white stripes such as would stand out from the surrounding landscape almost as brilliantly as did the sheds which were camouflaged during the late lamented War by our leading Royal Academicians. In fact it looked very much more like one of these strange new settlements of bungalows and weirdly



THE DAY-BOMBERS.—Formations of D.H.9as on the left and right, and Fairey Fawns and D.H.9as crossing one another in the centre.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



HIS MAJESTY'S GREETINGS.—Left, the King receiving the French mission. Centre, the King shaking hands with the Cape Flight. Right, the Cape Flight returning to their enclosure after being received by the King.

painted shanties which are growing up on our various downlands than it looked like an aerodrome. It looked so much so that it was named alternately the Alhambra, or Peacehaven. On the whole most people seemed to prefer to speak of the performance as The Bombing of Peacehaven.

In front of the buildings stood various and sundry quaint aeroplanes indicating that they were ready to leap into the atmosphere in defence of their home. And among them somebody claimed to have recognised the once notorious Grahame-White Ganymede, a large three-engined aeroplane which was alleged to have cost about £80,000 to build.

The set piece was not half so attractive as was the warship embowered in foliage last year, with its accompanying islands with sampans and things sculling about them and its attendant beer-garden.

The attack by the Fighters of 43 Squadron from Henlow under Sq. Ldr. Brooke might have looked more effective if it had been done something on the lines of the tank bombing last year. As it was the low bombers bombed from about twice the height of the tops of the sheds. And though their formation and flying was faultless it was not spectacular.

The bombers of No. 12 Squadron under Sq. Ldr. Salt were also academically correct but nothing like so effective as the attack by assorted de Havillands which was led by Air Commodore Dowding some two or three years ago. And the "bombs" as usual arrived before the machines which were supposed to drop them. On the whole, the set piece was dull. And somebody will have to think of something fresh.

THE LANDING COMPETITION.

The last event on the programme was the Landing Com-

petition for Instructors. This is quite an interesting event to put on the programme before lunch as it is the kind of thing which fascinates the enthusiasts who are keen enough to get there early. But it is unfair to the competitors and to those same enthusiasts to put it at the end of the programme when everybody is struggling to get away home.

Very properly the competition was won by the Central Flying School at Upavon, with No. 1-F.T.S. Netheravon second, and No. 2 F.T.S. Digby third.

DISTINGUISHED VISITORS.

During the afternoon the Cape Flight under Wing Cdr. Pulford arrived from Kenley and, having disembarked, the six officers and two N.C.O.'s were presented to the King.

Apropos the Cape Flight one feels that one ought to state, though it is unnecessary to explain, that the "heart-interest" photographs which appeared in some of the daily papers when the flight arrived at Lee-on-Solent were taken and published not merely without the consent of the people concerned, but absolutely contrary to their wishes.

Apparently what happened was that after the officers had finished with their official reception they went into the Air Station itself to meet their immediate friends and relatives. One or two Press photographers, typical of their breed in these days, and lacking all sense of decency, managed to sneak into the Station and took entirely illicit snapshots which were used by people whose sense of decency apparently is equivalent to that of their servants. There is an old proverb which says "What can one expect from a pig but a grunt?" So really these people are not so much to blame as are the people who are responsible for allowing them to penetrate into the Air Station.



BEFORE, DURING, AND AFTER.—Three views of the "Bombing of Peacehaven."

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GETTING AWAY.—The Fairey Fawns (Napier engines) starting for the big formation demonstration.

Presumably one can hardly be accused of publishing stories of heart-interest if one tells a joke against the Cape Flight. When they arrived in England they had nothing but the clothes in which they stood, these consisting of tropical kit and shorts. And unfortunately their proper uniforms, which had been sent on from Cairo, failed to reach England in time—which was not surprising considering that they had to travel by French railways.

To have appeared in their tropical kit before the King might have been correct, as it was proper Service kit. But it would also have savoured of the heroic. Therefore a day or two before the Pageant a sort of inspection of officers' kit was held at Kenley and the Cape Flight had issued to them whatever garments fitted them best. Thus one officer might be wearing an Air Commodore's jacket and a Squadron Leader's breeches and a Flying Officer's boots. Anyhow, they all turned out to parade before the King looking very smart and quite a credit to their borrowed tailors.

His Majesty also received during the Pageant the French Aviation Mission which recently arrived at Kenley by air from France—minus one particular member who was brought down by engine failure en route and landed down-hill down-wind upside-down.

It was rather a pity that the said French Mission were not invited to appear at Hendon in their beautiful duralumin Breguets, to give us another pretty little demonstration of flying such as was given by five French officers a couple of years ago.

During the afternoon His Majesty visited the new machines in what is commonly called the Amusement Park, where Sir Geoffrey Salmond and Group Captain Cave-Brown-Cave were presented to him, as were Mr. Frank Courtney and Señor de la Cierva.

Flg. Off. A. N. Glover was presented to the King of Spain who personally expressed to him his thanks for the part he played in rescuing Captain Estevez and his mechanic when they were lost in the Arabian Desert.

SOME HINTS FOR NEXT YEAR.

One heard a rumour at Hendon that next year the whole of the Pageant is going to be run by the Home Defence Area on its own account, without any help from the Air Ministry or the High Command or anybody else. If this be true one hopes that our Defenders will think up something fresh; for, to be perfectly candid, this year's show was just a little

bit dull, except of course to people who had never seen a real Air Pageant before. And one imagines that this cannot have been more than 25 per cent. of the total number of spectators.

There was nothing as impressive at this Pageant as the fight between the Boulton and Paul Bugle and the two single-seat fighters last year. And there was really nothing so likely to impress the uninitiated with the skill of the pilots as was the flying of the celebrated Central Flying School Snipe formation two or three years ago. There was too much mass formation flying and too little demonstration of skill.

A CAPTIOUS CRITIC.

Although there was a good deal about the Display which justified criticism, a letter which appeared in *The Daily Mail* of July 6 from a Mr. P. B. Burgoyne deserves itself to be criticised because it actually misrepresents facts.

Mr. Burgoyne's friend who told him that he got into the 10s. enclosure for 5s. may have been deceiving Mr. Burgoyne or Mr. Burgoyne may have misunderstood him. Or possibly there may have been a genuine mistake on the part of the man at the gate. But the R.A.F. personnel who were running that part of the show were as efficient as could be.

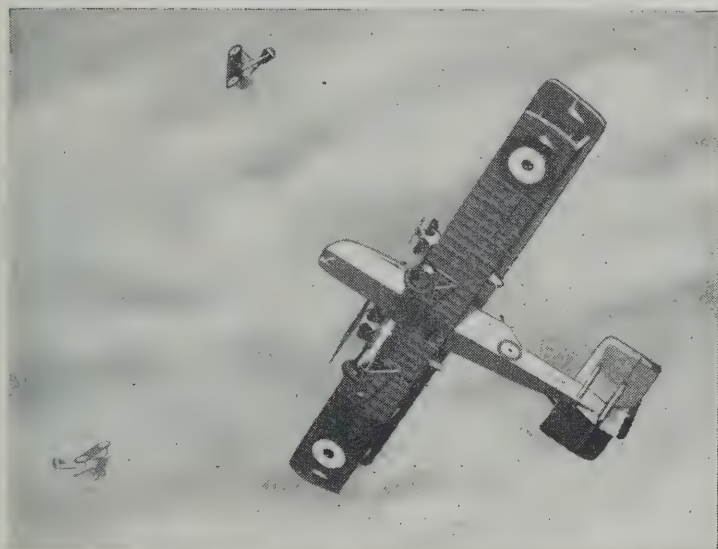
Mr. Burgoyne's statement that no provision whatever was made for the comfort of the crowd is sheer nonsense. Considering that arrangements had to be made for a crowd which might well number over 100,000 if the day were fine and might be only about 20,000 if the day were wet, the staff-work of the organisation was wonderful.

If Mr. Burgoyne could not find refreshments one can only assume that he did not take the trouble to read either his programme or the enormous notices which were put up at the Royal enclosure end of the ground. One of the great aeroplane sheds over the railway bank was excellently equipped with provender of various sorts. And though there was a big rush on the accommodation at the hotel, and one had to wait oneself for twenty minutes before one could get in for lunch at about 14.00 hours, both the waiting and the food were extremely good when one got there.

It is true that the number of police on the aerodrome was very small. But they were only there in case of disturbance of any kind, such as dealing with pickpockets or drunks. All the rest of the running of the show was done by R.A.F. personnel and done very much better than it is at the average horse-race meeting.



COMING HOME.—Fairey Fawns (Napier engines) landing after the formation display.



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THE RIVALS I.—The Hawker Hornbill (Rolls-Royce Condor IV, 700 h.p.), which is believed to be the fastest single-seat fighter.

The cars were parked in beautiful order and if Mr. Burgoyne took an hour and a-half to get out it must have been his own fault, for in spite of obstructions on the roads, as already mentioned, the cars were clear of the aerodrome inside of an hour.

Mr. Burgoyne says that the "booth," presumably he means enclosure, for Parliamentarians was very empty. If so that was because Parliamentarians were not sufficiently intelligent to go to the Display. The one person who did look into the M.P.s' enclosure said that apparently the Members of Parliament had given away their Parliamentary tickets to the most unattractive of their constituents, as he could not imagine that the people whom he saw there were really those chosen by British Electorate.

As for the Public Schools enclosure, there were about 600 public school people there, which is considerably more than have appeared at any previous Pageant.

One can only assume that Mr. P. B. Burgoyne suffers from chronic self-pity—as his initials might suggest. If he does happen across these notes and if he has any suggestions to make for the improvement of future Pageants one would be delighted to hear from him and publish his opinions.

The R.A.F. Pageant, Display, Demonstration, or whatever you like to call it, has certainly taken a definite place in the programme of Society movements during the London Season. And it has also caught on with the great semi-intelligent section of the British Public. But people are beginning to learn quite a lot about flying in these days and if the R.A.F. Pageant is going to continue its vast financial and educative success it must think of something new. It has now got to the stage of being something like putting on one of the old Empire Ballets of thirty years ago. And what we want is somebody who will put on a combination of a Cochran revue and Mr. Diaghileff's Russian Ballet.—C. G. C.

THE FRENCH MISSION TO ENGLAND.

A French Aviation Mission, including General Niessel Inspecteur Général de l'Aéronautique Française, and Admiral Frochot, is at present in this country on a tour of inspection of the Royal Air Force.

They arrived at Kenley in four Breguets and one Farman Goliath and their tour in this country will be made in the Vickers Victoria 24-seater troop-carriers suitably furnished for the occasion.

SOME BEAUTIES—AND TWO BEASTS.

The 1926 Display as a flying show shows steady progress along the lines marked out by previous Displays. There has never been anything but good flying at the R.A.F. Pageant or Display, but each successive year there has been a just discernible rise in the general standard—just a little more crispness and accuracy in the various evolutions, accompanied by an increasing scale of complexity of the evolutions themselves.

But in one respect the 1926 Display shows an advance which is almost a break with the previous Displays. New machines have appeared at previous Displays, and last year, for the first time, machines designed and built since the Armistice formed some considerable proportion of those outside the Experimental Park which took part in the body of the Display.

This year the Display was almost entirely flown on machines of recent design. But the experimental machines shown this year for the first time really gave the impression that at last the British Aircraft designer had been permitted to produce aircraft such as the R.A.F. deserve. Previously it has been impossible not to feel that "plus ça change plus c'est même chose" when gazing upon the latest release from the secret list. Different the new machines always have been, but the newer they are the more gadgetty they have tended to become, and it really looked as though in but a very short time one would have to seek for cleanliness of design and beauty of line only outside military aircraft.

But this year there is a very marked change. It will be necessary to go far to find aeroplanes of cleaner design and more delightful lines than were to be seen at Hendon last Saturday. The Avro Avenger, the Fairey Firefly and Fox, the Gloster Gorcock and the Hawker Hornbill are—to eyes accustomed to the officially supervised designs of the past few years—almost unbelievably refreshing in the obvious fitness of their form for the business for which they are intended.

And although one is very entirely convinced of the value of the radial air-cooled engine, and of the exceedingly fine high performance machines that British designers have produced, and undoubtedly will continue to produce with these engines, it is difficult to see how a small single-seater can be built with any existing air-cooled radial which will have



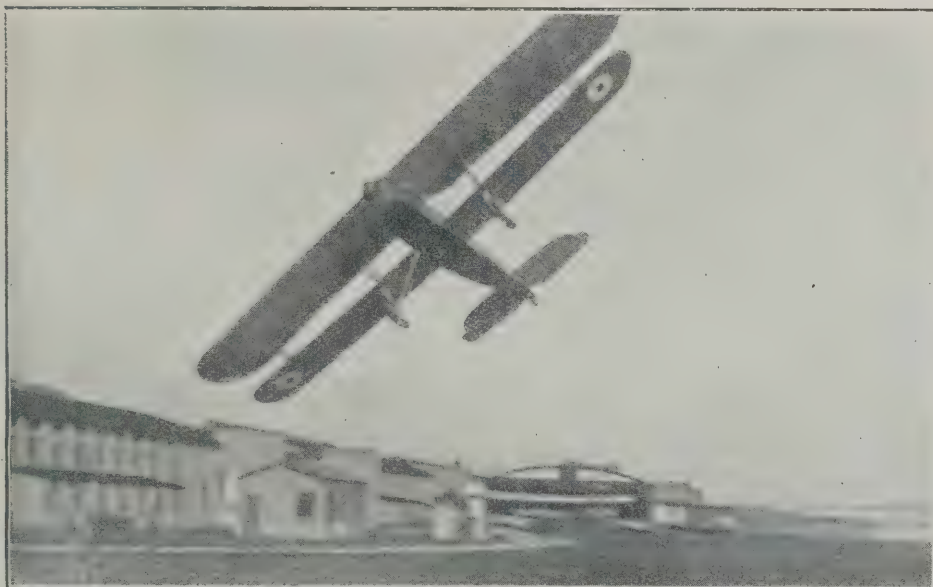
THE RIVALS II.—The Fairey Firefly (Curtiss 430 h.p.), which is believed to be the fastest single-seat fighter.

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THE HAWKER HERON METAL FIGHTER.



(Aeroplane Photograph.)

THE HAWKER HORSLEY (ROLLS-ROYCE CONDOR).

Works : Kingston, Surrey.

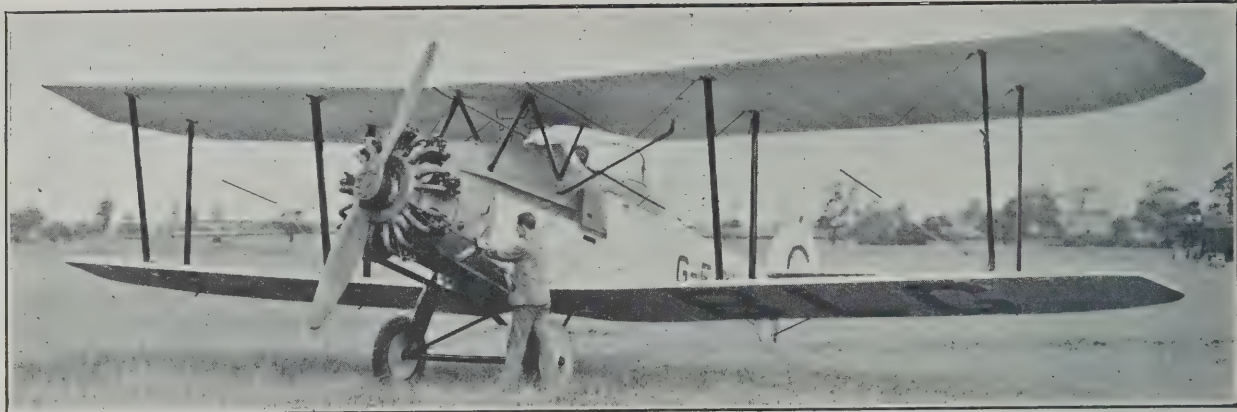
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ARMY CO-OPERATION.—The Bristol Boarhound (Jupiter engine), Capt. Frank Barnwell's "Bristol Fighter Replacement." The only all-steel machine in her class. Her speed is about 145 m.p.h.

the sheer beauty of line of these recent British water-cooled scouts. Mr. Fedden's new Bristol designs will go far to reduce the radials handicap—and, of course, sheer beauty of line is far from the only quality that counts—but it is a sign of very great importance that at last British machines have begun to give cleaner and more beautiful and not uglier and more highly trimmed with odd equipment hung about them.

And having thus expressed one's pleasure at the beautiful aircraft publicly exhibited for the first time on Saturday, one may be permitted to welcome the appearance of what must have struck most spectators as the two ugliest, because the two most strange and *outré* exhibits, the Pterodactyl and the Auto-Giro.

It may safely be said that armed only with drawings, backed even by the most convincing calculations, and wind-tunnel tests and the like, the inventor of either the Pterodactyl or Auto-Giro would have had very little hope at any period since the War of extracting financial support from the Air Ministry. And quite frankly one does not blame the said Ministry particularly.

But three or four years ago the machines themselves in flying order would have required a large amount of pushing before they were seriously considered.

There are those who will say that neither the Pterodactyl or the Auto-Giro can be of any practical use for any purpose. But both of them have already been of use—they have taught quite a lot of people that there is more to be learnt about flying than they had previously believed—and there are few lessons so valuable as that which produces the conviction of ignorance.

Both these strange—and to our eyes ungainly—aircraft can

do things that the conventional aircraft cannot do, or cannot do so well. That there may be other things the conventional type can do better may be granted—but they are at least a step towards the development of machines combining the capacity of both the normal and the—at present—abnormal types.—W. H. S.

DISP-LAYS.

(With apologies to Those of Serious Mind.)

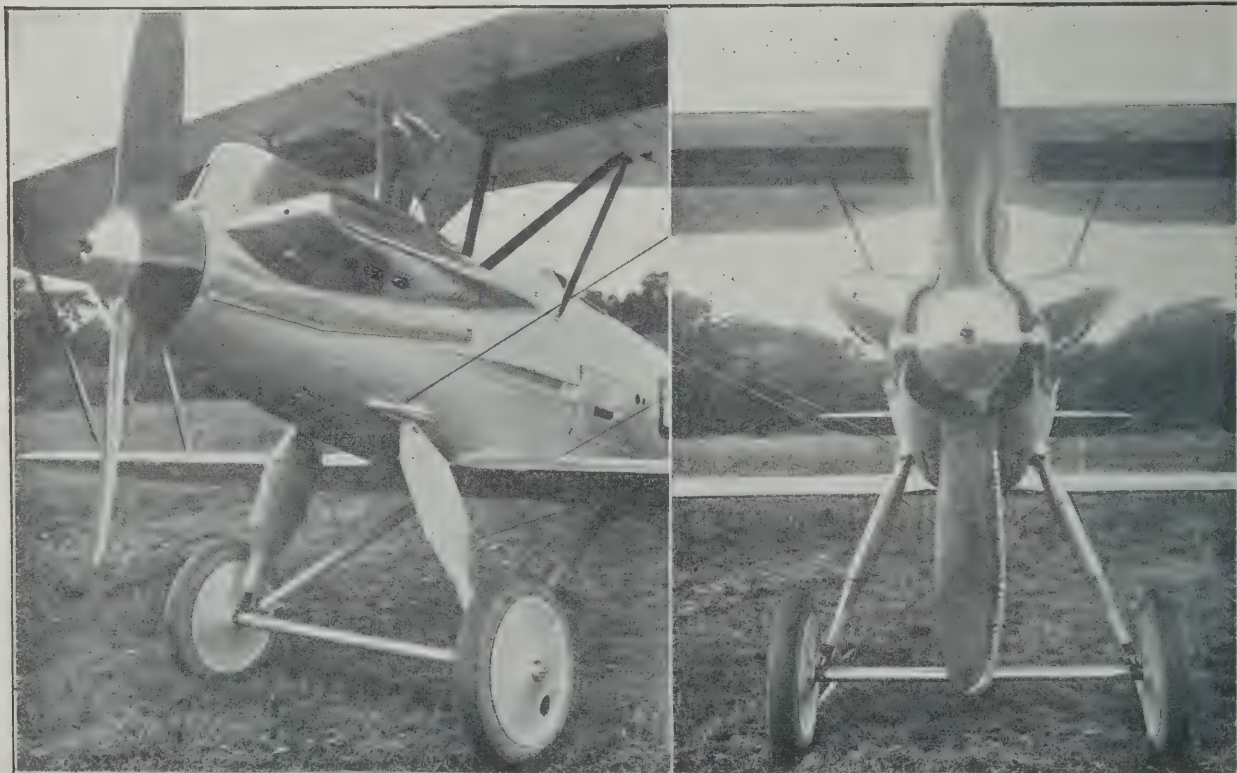
If money for pleasure you spend on,
I hope that you all went to Hendon,
The Air Force Display
In its usual way
Was "A Treat one can always Depend on."

The long-distance night bombing host,
Made hay while the sun shone, almost.
Then three Bristol Fighters,
All smart little blighters,
Got letters quite quick through the post.

Said one to his pal re the Hornbill—
"Yon bird will knock spots off the Fawn, Bill."
"No doubt!" Bill replied,
"Have you seen its inside?
Those fresh horses must double its corn bill!"

The speed-range it had in the air,
Appeared to be something quite rare,
It tucked in its tail,
And crept past like a snail,
Then it turned and shot back like a hare

When Pulford arrived with III Ds,
An onlooker asked, "What are these?"
He was told, "They are Faireys,
No other 'bus there is,
That Cairo to Cape with such ease."



THE RIVALS III.—The business end of the Avro Avenger (Napier Lion VIII engine, 525 h.p.), which is believed to be the fastest single-seat fighter.

The Sir Charles Wakefield Flight to Australia.

THROUGHOUT this projected 26,000 miles flight commenced on the last day of June, the Armstrong-Siddeley Jaguar engine of Mr. Cobham's D.H.50J will be lubricated by

WAKEFIELD CASTROL MOTOR OIL

It will be remembered that this world-famous lubricant was used on Mr. Cobham's flight with Sir Sefton Brancker to Burma and back, and on his survey of the Cape Air Route. Most of the big flights have been carried out on Wakefield CASTROL, notably the first aeroplane flight across the Atlantic, the first direct flight to Australia and from Cairo to the Cape, the Marchese di Pinedo's 35,000 miles air tour, the trans-South Atlantic Flight of Commandante Franco, the Bristol Jupiter Endurance Test of 25,074 miles with a sealed engine, six out of seven Aerial Derbys, and every King's Cup Race.

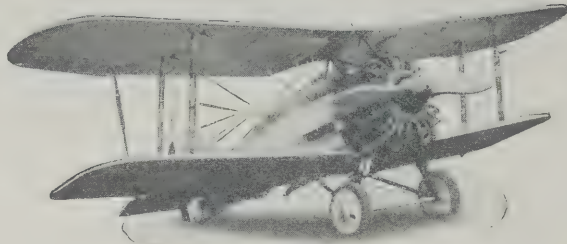
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WONDERFUL FLYING AT
HENDON.

180 AEROPLANES.

AERIAL ACROBATICS THRILL
A RECORD CROWD.

In ideal weather, and before a record crowd, which included three Kings and Queens, the greatest aerial pageant ever seen is in progress to-day at Hendon, where 180 aeroplanes are taking part in the R.A.F. display.

King George and Queen Mary were accompanied by the King and Queen of Spain, the King and Queen of Greece, the Duke of York, himself an R.A.F. pilot, Prince and Princess Arthur of Connaught, Prince Chichibu of Japan, the Grand Duchess Kira of Russia, Don Alfonso of Spain, and the Infanta Beatriz of Spain.

Close to them in the Royal enclosure were the two great heads of the Air Force, "Boom" Trenchard and "Tails Up" Salmond. In addition there were several members of the Government, hundreds of M.P.s, and scores of other well-known men and women.

From noon onwards there did not seem to be a moment in which one could not hear the roar of engines, either on the ground or in the air. There was never an instant's delay. Events were scheduled to the second.

Evening Standard, July 3rd, 1926.

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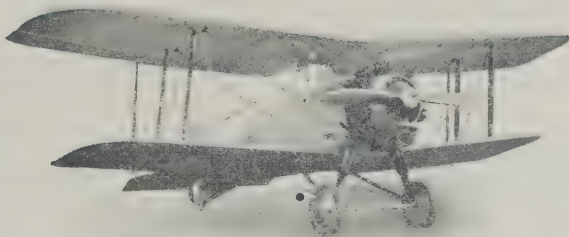
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GLOSTER-GREBE,
fitted with Jupiter or Jaguar engine.

may
accompany. SERVICE EXERCISES

The demonstrations, however, interludes in the series of public exercises, which started with the 500-mile course of the heavy night-fighter, and went on to the always interesting competition between the Army Co-operation squadrons in diving down to pick up a message suspended on two poles. After lunch came the group evolutions of 54 single-seater fighters—Nos. 19, 23, 29, 32, 41, and 56 Squadrons—easily the most impressive demonstration of air power yet seen. The six squadrons, spreading probably over two miles of the sky, came in succession past the Royal box, dipping in salute and then dividing into two wings of three squadrons, and diving yet again to all appearance at each other from opposite directions. The low bombing by a flight of No. 19 Squadron, commanded by Squadron Leader H. W. G. Jones, was, as usual, full of incident, with the exciting dives and bomb-bursts round a moving tank. The air manoeuvres, controlled by wireless telephony and carried out by No. 25 Fighter Squadron (commanded by Squadron Leader A. H. Peck), realized every expectation. The significance of this development has already been discussed in *The Times*; it only remains to add that the drill was of the highest quality, and the loud speakers made every command clearly audible to the crowd.

The Times, July 5th, 1926.

of two squadrons of nine aeroplanes. And at this point it was interesting to study the intent faces of the officers of foreign Powers present in large numbers. Fifty-four machines monopolised our immediate sky—Gamecocks, Grebes, and Siskins; the greatest number of aeroplanes that have ever taken the sky together before the public.

Six bunches of nine—all beautifully together—got off the ground, went away into the distance, and came back. Wing tip to tip, almost overlapping in many cases it seemed, but every one of the fifty-six keeping perfect station.

The layman may not perhaps appreciate that flight evolutions in single-seater fighters are much more difficult than in a bomber. The difficulty is to keep station. When you go through an air bump as you frequently do, your machine is liable to be thrown about, whereas in a heavier

of aircraft like a bomber it is speaking, only a quick simile is that of a la-

Sunday Times, July 4th, 1926.

COCK,"
engine.

CORRESPONDING WITH ADVERTISERS.

DISPLAYS (continued).

All those whose great wish is to try a fly,
Should relish a trip in the Firefly,
Before you've said, "Jack."
It has gone there and back—
Be it Moon, or the Stars, or some higher fly

Frank Courtney did well on the Helicopter,
From trying to loop you could tell 'e stopper;
When coming to land,
His approaching was grand—
It was splendid to notice how well 'e dropter.

A ptail-less conveyance we lacked tyl,
The rummy research people backed Hyl,
This ptime—not a mess,
But a splendid success,
—One is told that it's spelt "Pterodactyl."

The way that it floated about,
Left one with no shadow of doubt,
That we're nearing the goal,
Of that perfect control,
Which no aeroplane should be without

When fifty-three scouts do a show,
It seems that "reserve" has to go,
From Squadron to Squadron
And say, "I'm the odd one,
I've come to replace poor old Joe!"

A Squadron commanded by Peck,
Was drilled in the air from the "deck,"
Those Mosquitos heard,
For they always concurred,
And went just where he told them to trek.

He must be a horrible bloke,
Whose set piece turned out such a joke,
He well knew the way,
That the wind blew that day,
When he said to the crowd, "You may smoke!"

C. B. B.

THE ROYAL AERONAUTICAL SOCIETY.

New Chairman.—At a meeting of the Council of the Royal Aeronautical Society Colonel The Master of Sempill was elected Chairman of the Society for the year October, 1926, to September, 1927.

R.38 Memorial Prize.—The R.38 Memorial Prize, offered annually for the best paper received by the Society on some subject of a technical nature in the science of Aeronautics, has been awarded this year to Mr. R. V. Southwell, F.R.S., A.F.R.Ae.S., for his paper entitled "On the Calculation of Stresses in the Hulls of Rigid Airships." The paper will be published in the Journal of the Royal Aeronautical Society.

Prizes.—The regulations for the Edward Busk Memorial Prize of twenty guineas, and for the R.38 Memorial Prize of twenty-five guineas, may be had on application to the Secretary. Entries for the former must be received by Sept. 30, and for the latter by Dec. 31.

Associate Fellowship Examination.—Attention is again drawn to the Society's examination for Associate Fellowship. This examination will be held, provided sufficient entries are received, on Sept. 20 (Part I), and Sept. 21 (Part II). Entries must be received by Aug. 23.

The Society's Aims.—A booklet has been published giving briefly the work and aims of the Society. From it anyone wishing to join the Society in any grade may obtain the particulars he wishes with regard to the qualifications necessary, rates of subscription, etc. The booklet will be sent post free to anyone applying for it.

J. LAURENCE FRITCHARD, Honorary Secretary.

A RECORD CLIMB.

During a test flight at Buc, Capt. Stachon of the Polish Air Force reached a height of 19,680 feet in 14 mins. 38 secs., on a Bleriot Spad 61 single-seat fighter biplane (450 h.p. Hispano-Suiza engine).

The machine, one of a batch of 250 purchased by the Polish Air Force, was a perfectly standard machine weighing 1,480 kgs., and the climb was officially observed.

This performance is claimed in France as a record climb but it is interesting to recall an officially recorded climb made in 1922 by Sq. Ldr. Haig at Martlesham Heath on the Gloster Bamel (450 h.p. Napier Lion engine) when he reached a height of 19,500 feet in 11 mins. 34 secs. Although the Bamel was built as a racing machine it was carrying the equivalent to a military load during this performance.

Capt. Stachon has been in charge of the reception of this Polish order, and from Sept. 1, 1925, to Mar. 31, 1926, he made 450 flights, of which 175 were over 14,000 feet and 14 over 22,500 feet, in 157 flying hours.

THE KING'S CUP RACE.

The race for the King's Cup radiates (in triangles) from Hendon, on Friday and Saturday next. The course announced in last week's issue of THE AEROPLANE still holds good, but no doubt there will be changes before the event begins.

The following is the final list of entries:

Vickers Vixen, 450 h.p. Napier Lion. (Entrant Mr. Douglas Vickers. Pilot Mr. E. R. C. Scholefield.)

Nimbus-Martinsyde, 300/330 h.p. Nimbus. (Entrant Col. J. Barrett-Lennard. Pilot F. T. Courtney.)

Martinsyde-A.D.C.I., 385 h.p. Mark III A Armstrong-Siddeley Jaguar. (Entrant Lt.-Col. M. O. Darby. Pilot Sq. Ldr. H. W. G. Jones.)

D.H.51, 120 h.p. Airdisco. (Entrant Air Commodore J. G. Weir. Pilot Lt.-Col. The Master of Sempill.)

Bristol Badminton, 450 h.p. Bristol Jupiter VI. (Entrant Sir George Stanley White. Pilot Mr. F. L. Barnard.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Capt. G. de Havilland. Pilot Capt. G. de Havilland.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Sir Charles C. Wakefield, Bart. Pilot Mr. H. S. Broad.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant His Grace The Duke of Sutherland. Pilot Capt. F. G. M. Sparks.)

Nimbus-Martinsyde, 300/330 h.p. Nimbus. (Entrant Lt.-Col. M. O. Darby. Pilot Mr. H. H. Perry.)

Cranwell Monoplane C.L.A.3, 33 h.p. Bristol Cherub. (Entrant Sq. Ldr. W. Thomas. Pilot Flt. Lt. N. Comper.)

D.H.37, 300/330 h.p. Nimbus. (Entrant A. S. Butler. Pilot Mr. A. S. Butler.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Major Gilbert Dennison. Pilot Capt. W. G. McDonough.)

Martinsyde F.6, 210 h.p. Wolseley Viper. (Entrant Leslie Hamilton. Pilot Leslie Hamilton.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant W. L. Hope. Pilot Mr. W. L. Hope.)

Parnall Plover, 450 h.p. Bristol Jupiter VI. (Entrant George G. Parnall. Pilot Sir Christopher J. Q. Brand, D.S.O., M.C., D.F.C.)

Swallow, 130 h.p. Clerget. (Entrant Mr. Dudley Watt. Pilot Mr. Dudley Watt.)

[N.B.—No fresh edition of the Course has been issued up to the time of going to press.—ED.]



A KING'S CUP COMPETITOR.—The Bristol Badminton (Jupiter engine) with her pilot, Mr. F. L. Barnard.



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Franco**

**Alan
Cobham**

**Marchese De
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

ANOTHER AMERICAN AIR RECORD.

On Thursday, July 1, Major Lester D. Gardner, Editor of *Aviation*, New York, and Mrs. Gardner, arrived at Croydon from Berlin on an Imperial Airways machine, and in the evening he was entertained by a few friends at the Royal Aero Club.

The event is particularly noteworthy because on Tuesday night Major Gardner dined with the Russian Aero Club in Moscow, on Wednesday night he dined with the German Aero Club in Berlin and on Thursday night he dined with the Royal Aero Club in London. Thus on three consecutive nights he dined respectively with the representatives of Bolshevism, Republicanism and Royalism.

Fortunately something near a couple of thousand miles separates the extremes, but Mr. Gardner's performance shows how the size of the World is being diminished by air transport. Also it should teach us not to regard our natural enemies the Bolsheviks as being so very far away. In 1814 the Russian Armies had been marching for something like two years before they took their dinners in Paris.

Just before reaching London Major Gardner completed 17,000 miles of flying since he arrived in Europe ninety days earlier. Out of those ninety days he had flown for about forty days, so that while flying his actual mileage was about 400 miles a day. He has covered practically every air line actually in Europe at least once. And, having gone by boat to Egypt he has flown from Cairo to Baghdad, Baghdad to Mosul, and thence back to Palestine. He has visited every capital in Europe at least once and he has landed at about sixty different aerodromes.

The air line pilots all over Europe have come to regard Major Gardner as an outside in mascots, for in his forty days' flying he only struck three days of bad weather and only had one forced landing, which was due to heavy rain through which he and a Czech pilot agreed to try and reach Berlin in spite of weather reports saying that flying was impossible.

Through all his 17,000 miles he never had an engine failure, which contrasts well with one's own experience of four engine failures going to Berlin and back, even though one escaped forced landings. This may be largely explained by the fact that throughout Middle Europe practically all the engines are Rolls-Royces of one kind or another while on the Imperial Airways routes and on the Cairo-Baghdad routes the engines were Napiers.

Major Gardner is full of enthusiasm for British aircraft, more especially the big Vickers and Handley Page twin-engined machines, and the Bristol Fighter and the D.H.9a, of all of which he had considerable practical experience.—

C. G. G.

TO CAIRO AND BACK.

Lt.-Col. Minchin and Mr. Mayer left Croydon, on the Bristol Bloodhound (Bristol Jupiter VI), on June 30, at 04.20 hrs. in an attempt to fly to Cairo in two days. That night they reached Brindisi and left next morning for Cairo via Athens and Sollum.

They arrived over Sollum after dark and not recognising the aerodrome flew on to a place called Mutra, ten miles beyond Sollum, and in the desert. This caused some delay but they were able to leave for Cairo early next morning.

They duly arrived there at 11.50 hrs. and at 14.30 hrs. they started back for London, reaching Sollum on Friday night. Thence they flew direct over 800 miles of sea to Brindisi. This shows implicit confidence in the machine and the engine.

At the moment of writing they are delayed at Brindisi by a broken tail skid.

THE COUPE ZENITH.

On July 3-4 the final contest for the Coupe Zenith was held over the course Orly—Bron (Lyon)—Orly in rainy and foggy weather. The Coupe Zenith was presented by the Société du Carburateur Zenith in 1923, for three annual competitions for commercial aircraft, the winners being the aircraft which covered the complete course with the lowest petrol consumption for weight carried.

The 1923 competition was won by M. Bossoutrot on a Farman with a consumption of 475 grammes per kilogram of useful load transported. In 1924 this figure was reduced to 359 grammes, the winner being M. Patin on a Caudron. Bad weather prevented the 1925 competition from being held.

For the 1926 competition there were eight entries, and only one failed to complete the course, being lost in a fog.

M. Drouhin, on a Farman F.70 (400 h.p. Jupiter engine) completed the course with a consumption figure of 253 grammes, and at an average speed of 143.17 km.p.h., and this wins the third and final Coupe Zenith and 30,000 francs.

The other prize-winners were:—2nd, M. Gauron (Caudron C.128, 128 h.p. Salmson engine), 256 grammes, 123 km.p.h.; 3rd, M. Descamps (Albert T.E.1, 40 h.p. Salmson engine), 258 grammes, 118 km.p.h.; 4th, MM. Lefolcalvez and Roques (Pander biplane, 60 h.p. Walter engine), 385 grammes, 110 km.p.h.

The success of the Jupiter engine in this competition is very interesting. Since the first competition in 1923 the petrol consumption of the winner has been reduced by over 53 per cent., which goes to prove that the Jupiter engine, apart from establishing a very high reputation on the Continent as a high-performance military engine, can now be recognised as a very economical commercial engine.

MR. COBHAM'S FLIGHT.

The flight to Australia and back by Mr. Alan Cobham and Mr. A. B. Elliott has unfortunately been indefinitely delayed by an extraordinary and serious accident to Mr. Elliott, who is now in a critical condition in the R.A.F. hospital at Basra.

The accident occurred when 120 miles up the Tigris. Some sort of explosion took place inside the cabin, with the result that Mr. Elliott's arm was broken and part of the petrol pipe entered his left lung.

At the moment of writing the cause of the explosion is unknown. There could not have been sufficient pressure in the petrol tank or pipe in question to have caused an explosion of such violence. It seems possible that a static charge of electricity may have had something to do with it, but there was no fire. A later theory is that some native shot at the machine.

Mr. Cobham left Rochester at dawn on Wednesday, June 30. He reached Naples the same evening and the following morning flew to Athens. He made no progress on July 2 as he was indisposed. Mr. Cobham has always retained a private hoo-doo at Athens.

On July 3 he flew to Alexandretta and on July 4 he flew to Baghdad. When the accident occurred he was on his way to Bandar Abbas.

Everyone will wish Mr. Elliott a speedy and complete recovery. He is very popular everywhere and is absolutely invaluable on a flight such as this.

Much sympathy will go to Mr. Cobham in his anxiety for Mr. Elliott, for no one knows better than the writer Mr. Cobham's esteem for his engineer. It is a great disappointment for Mr. Cobham not to be able to continue the flight, which has up to now been going so well, but one is certain that his anxiety for Mr. Elliott is even greater.—G. D.

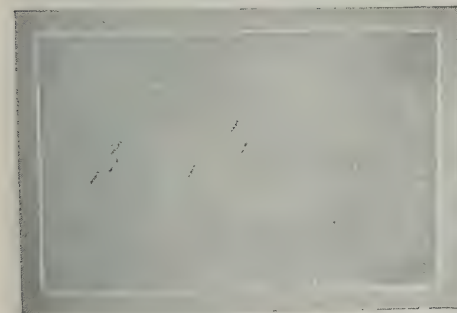
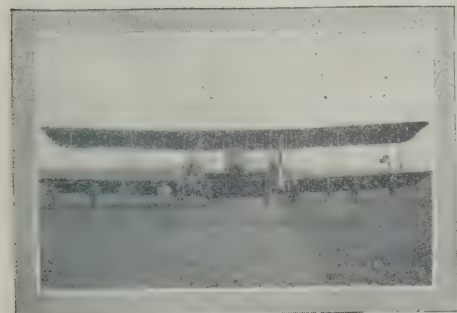


TOWARDS AUSTRALIA.—Mr. Cobham and Mr. Elliott on the Short floats of their de Havilland (Jaguar engine) at Rochester before their start.




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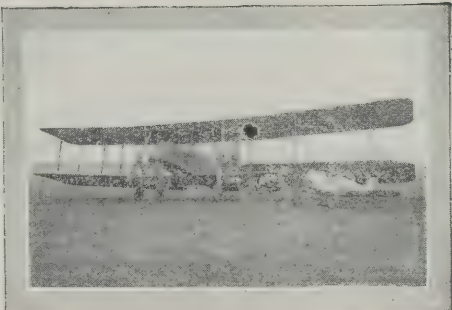
THE VICKERS "VIRGINIA" LONG DISTANCE BOMBER (Twin 450 h.p. Napier "Lion" Engines)



LENGTH OVERALL ... 50'-7"
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SPAN (SPREAD) .. 86'-6"
SPAN (FOLDED) .. 44'-3"

Extract from :-
OFFICIAL  REPORT.
Parliamentary Debates
HOUSE OF COMMONS.
VOL. 192, No. 18. THURSDAY, 25th FEBRUARY, 1926.

"The SECRETARY of STATE for AIR (Sir Samuel Hoare): Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing. Lieut.-Commander BURNEY: With full service load.
Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance, of about 800 miles, spending as much as 12½ hours continuously in the air



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THE ROYAL AIR FORCE.

The London Gazette.

June 29.

GENERAL DUTIES BRANCH.—The following are granted perm. comms. in the ranks stated:—Flt. Lt. G. G. Dawson, Flg. Off. M. C. W. C. Flint, M.C. (June 1). R. P. P. Pope, D.F.C., is granted a S.S. comm. as a Flg. Off., with effect from and with seniority of, June 14.

The following Plt. Offs. are promoted to the rank of Flg. Off.:—S. H. Hardy, G. R. Beamish, G. W. Hayes (June 17).

The following are transferred to the Stores Branch on probation, with effect from and with seniority of, June 24:—Flt. Lt. T. G. Bowler (from Sq. Ldr.), Flg. Off. G. F. P. Warren (from Flt. Lt.), Flg. Off. C. Hanson-Abbott (from Flt. Lt.).

Flg. Off. R. S. Carroll, A.F.C., is transferred to the Reserve, Class A, in this rank and is granted permission to retain the rank of Flt. Lt. (June 27). The following Flg. Offs. are transferred to the Reserve, Class A:—A. D. Drysdale, L. G. A. Kirthner, R. P. Mollard (June 28). Plt. Off. R. Connor resigns his S.S. comm. (June 30). Plt. Off. on probation C. L. Edwards relinquishes his S.S. comm. on account of ill-health (June 30). Flt. Lt. R. V. Bramwell-Davis (Lt., R.A.) relinquishes his temp comm. on return to Army duty (June 17).

STORES BRANCH.—H. N. Davies is granted a perm. comm. as a Plt. Off. on probation, with effect from and with seniority of, June 24. MEDICAL BRANCH.—Flg. Off. H. W. Corner, M.B., is promoted to the rank of Flt. Lt. (June 24).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. in Class AA, General Duties Branch, as Plt. Offs. on probation (June 14):—J. H. Simpson, R. E. Watson.

Capt. T. B. Marson, M.B.E., is granted an hony. comm. as a Wing Cdr. (June 20).

The following officers relinquish their comms. on completion of service:—

Flg. Off. W. F. Knight, Flg. Off. F. Neale, Flg. Off. A. E. Ward (Apr. 20); Flt. Lt. B. A. Trechmann (May 1); Flg. Off. A. V. Blunt (May 8); Flg. Off. G. E. Muir (May 15); Flg. Off. J. W. Grose, Plt. Off. L. J. Tripp (May 22); Flg. Off. C. E. Jessel (June 26). Flg. Off. H. J. Ellam is transferred from Class C to Class A (May 1); Flg. Off. T. J. Shaw is transferred from Class A to Class C (Nov. 20, 1925); Flg. Off. H. G. Herbert is transferred from Class B to Class C (Apr. 23).

The Half-Yearly Promotion List.

Air Ministry, July 2.

ROYAL AIR FORCE.

The undermentioned are promoted with effect from July 1:—GENERAL DUTIES BRANCH.—Group Capt. to Air Commodore.—J. L. Forbes, O.B.E.

Wing Cdr. to be Group Capt.—H. M. Cave-Browne-Cave, D.S.O., D.F.C.

Sq. Ldrs. to be Wing Cdrs.—R. E. Saul, D.F.C., E. R. Manning, D.S.O., M.C., J. S. T. Bradley, O.B.E., V. S. Brown, W. B. Callaway, A.F.C., C. C. Durston.

Flt. Lts. to be Sq. Ldrs.—N. S. Douglas, J. W. Woodhouse, D.S.O., M.C., E. R. Whitehouse, K. H. Riversdale-Elliott, R. B. Mansell, O.B.E., L. J. St. G. Bayly, M.C., B. E. Harrison, A.F.C.

Flg. Offs. to be Flt. Lts.—H. C. Pyper, R. S. Greenslade, W. M. M. Hurley, N. S. Paynter, F. E. Bond, E. N. T. Edwards, W. F. Dry, R. A. Vosper, R. C. B. Brading, D.F.C., A. E. Reynolds, W. D. Gairdner, D.F.C., A. T. Laing, C. Jackson, G. L. Carter, F. E. C. Benstead, R. S. Martin, G. R. Hicks, D.F.C., A. F. James, G. H. Allison, E. J. Protheroe, J. C. Coulson, C. A. Horn, L. Darvall, M.C., H. A. L. Pattison, S. Symonds, H. J. Gemmel, S. H. Potter, R. Pyne, D.F.C., E. A. C. Britton, D.F.C., J. W. F. Merer, R. E. M. Milne, W. J. Richards, F. H. Astle, H. Norrington, E. H. Rundle, H. K. Goode, D.S.O., D.F.C., J. S. Harrison, W. S. Allen, G. W. Birkinshaw, F. K. Damant, D.F.C., H. Nelson.

STORES BRANCH.—Sq. Ldr. to be Wing Cdr.—L. Auker, O.B.E. Flt. Lts. to be Sq. Ldrs.—E. D. Galloway, F. E. J. Coates, A. J. M. Ross, M.B.E.

Flg. Offs. to be Flt. Lts.—E. G. Keeping, E. P. Terry, W. C. Farley, H. T. H. Copeland, R. D. G. Marcroftie, M.B.E.

STORES BRANCH (SUPPLEMENTARY LIST).—Flg. Off. to be Flt. Lt.—A. Davidson, M.C.

ACCOUNTANT BRANCH.—Flg. Offs. to be Flt. Lts.—A. J. More, A. C. Lobley, A. D. Stonehouse.

MEDICAL BRANCH.—Wing Cdr. to be Group Capt.—A. W. Iredell. Sq. Ldrs. to be Wing Cdrs.—W. A. S. Duck, O.B.E., A. E. Panter, B.A.

Flt. Lt. to be Hon. Sq. Ldr.—H. E. H. Tracy.

Appointments.

Week ending July 5.

GENERAL DUTIES BRANCH.—Squadron Leaders G. H. P. Padley, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 3/6. J. Everidge, M.C., to No. 14 Sqdn., Palestine, instead of to No. 2 Arm. Car Coy., Palestine, as previously notified, 11/6. A. N. Gallehawk, A.F.C., to No. 2 Arm. Car Coy., Palestine, 22/3.

Flight Lieutenant A. E. Woodbridge, to No. 99 Sqdn., Bircham Newton, 12/6.

MEDICAL BRANCH.—Flight Lieutenants (Hon. Sq. Ldr.) C. A. Meaden, to No. 20 Sqdn., Duxford, 23/6. R. L. C. Fisher, M.B., to No. 32 Sqdn., Kenley, 23/6.

Flying Officers E. J. Jenkins, to Station H.Q., Bircham Newton, 23/6. M. J. Marren, to No. 3 Sqdn., Upavon, 24/6. S. F. Heatley, M.B., B.A., to School of T.T. (Men), Manston, 28/6. P. H. Perkins, to R.A.F. Depot, Uxbridge, 28/6.

STORES BRANCH.—Flight Lieutenants D. Mitchell, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/6. H. E. T. Crocker, to A. and A.E.E., Martlesham Heath, 11/6. H. V. Robbins, to School of T.T. (Men), Manston, 23/6. T. G. Bowler, to School of Store Accounting and Storekeeping, Kidbrooke, 24/6.

Flying Officers C. F. P. Warren, to S.S.A.S., Kidbrooke, 24/6. C. Hanson-Abbott, to S.S.A.S., Kidbrooke, 24/6. P. Alderson, to No. 2 Sqdn., Manston, 23/6. A. M. Reidy, to No. 207 Sqdn., Eastchurch, 23/6. F. R. Lines, to No. 9 Sqdn., Manston, 23/6. O. G. Ridley, to

No. 43 Sqdn., Henlow, 23/6. H. Seidenberg, to H.Q., Inland Area, Stanmore, 23/6.

Pilot Officers G. L. Worthington, to No. 15 Sqdn., Martlesham Heath, 23/6. H. M. S. Daves, to School of T.T. (Men), Manston, 23/6. H. N. Davies, to S.S.A.S., Kidbrooke, on appointment to a Perm. Comm., 24/6.

ACCOUNTANT BRANCH.—Flying Officers J. Freeman-Fowler, to No. 1 F.T.S., Netheravon, 18/6. H. E. Cardwell, to No. 1 S.D., Kidbrooke, 28/6.

The King's Birthday Honours.

The List of Honours and Awards published on the occasion of the King's Birthday includes the following names:—

KNIGHT.—McClellan, Lieut.-Colonel Francis Kennedy, A.F.C. In recognition of his services to aviation.

ORDER OF THE BATH.

ROYAL AIR FORCE.

C.B. (Military Division).—Higgins, Air Commodore Thomas Charles Reginald, C.M.G., R.A.F.

C.B. (Civil Division).—Simpson, George Clarke, Esq., C.B.E., LL.D., D.Sc., F.R.S., Director of the Meteorological Office.

ORDER OF THE BRITISH EMPIRE.

ROYAL AIR FORCE.

Military Division:—K.B.E.—Steel, Air Vice-Marshal John Miles, C.B., C.M.G., C.B.E., R.A.F.

C.B.E.—Kirby, Wing Cdr. Frank Howard, V.C., O.B.E., D.C.M., R.A.F.

O.B.E.—Wombwell, Flt. Lt. Albert, R.A.F.

M.B.E.—Amers, Flg. Off. (Honorary Flight Lieutenant) John Henry, R.A.F.; Dollery, Flg. Off. Charles, R.A.F.; Greenlaw, Flg. Off. Robert Ritchie, R.A.F.; Jinman, Flg. Off. William Henry, R.A.F.

ROYAL AIR FORCE (DECORATIONS).

Air Force Cross.—Chick, Flt. Lt. John Stanley, M.C.; Rankin, Flt. Lt. Archibald James.

Air Force Medal.—Hammond, 328655 Sgt. Frederick Gilders; Dobbs, 315008 L-AC. Ernest Arthur.

Sir Francis McClellan is the first of the Pioneers of British Aviation to receive a title. All other titles given to personages concerned with flying have been given to serving officers or to business men.

As a pioneer, Frank McClellan began by having a biplane of the Wright type built for him by Short Brothers at Leysdown. Later he bought the present aerodrome at Eastchurch, and presented it to the Aero Club (at a nominal rent of a shilling a year). There he had other machines built for him by the Short Brothers.

When, in 1911, the Admiralty began to take notice of flying Frank McClellan lent three Short biplanes for the training of Lieuts. Samson, Longmore and Gregory, R.N., and Lieut. Gerrard, R.M.L.I., who were taught to fly by Mr. George Cockburn. Afterwards he spent a great deal of money on new and experimental aircraft, at a time when the Government refused to help development.

On the outbreak of War in 1914 he joined the R.N.A.S., and served till the end of the War, and rose to the rank of Lieut.-Col. R.A.F.

Since then he has been continually active in the cause of Aviation, and is the main stand-by of the Royal Aero Club.

None has done better work for British Aviation than has Sir Frank McClellan. He is the worst speaker and the best worker the Club has ever had on any of its Committees. His generosity to all and his loyalty to his friends have endeared him to everybody. His modesty and his hatred of publicity are the only things which have prevented him from receiving long ago recognition of his services to England.

Air Commodore Higgins was appointed Chief Staff Officer to the Iraq Command, R.A.F., in April, 1926. Before that he was Director of Training in the Department of the Air Member for Personnel.

Dr. Simpson, who has been Director of the Meteorological Office since 1920, was born in 1878, and was educated at Owen's College, Manchester, and at the University of Göttingen. He joined the Meteorological Office in 1905; was Physicist of the British Antarctic Expedition, 1910-12, and was on the Indian Missions Board, 1917-19. He is a Fellow of the Royal Society.

Sir John Steel, who joined the R.N.A.S. from the Navy during the War 1914-18, was Deputy-Chief of the Air Staff and Director of Operations and Intelligence in the Department of the C.A.S., until April, 1926, when he was appointed to command the Wessex Bombing Area, Air Defences of Great Britain.

Wing Cdr. F. H. Kirby, V.C., is commanding No. 4 Stores Depot, R.A.F., Ickenham. He was awarded the Victoria Cross on Oct. 5, 1900, in South Africa. He was in the Air Battalion, R.E., before even the R.F.C. was formed, and is one of those of the Old Army who have done so much to build up the proper Service Spirit in the R.A.F.

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| First London-Australia ... | Late Sir Ross Smith | 13,500 | 1919 | Shell |
| First London-Cape | Colonel van Ryneveld | 6,281 approx. | 1920 | Shell |
| First London-N. Africa ... | A. Cobham | 1 300 | 1924 | Shell |
| First Holland-Batavia | Van der Hoop | 6,680 | 1924 | Shell |
| First North Pole Attempt | Capt. Amundsen | — | 1924 | Shell |
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Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident near Abu Sueir, Egypt, to a D.H.9a of No. 4 Flying Training School, Abu Sueir, on June 29, Plt. Off. Noel Jardin Anderson and No. 335447 L-AC. Edward Ernest Gregg, the pilot of the aircraft, were killed.

The Air Ministry regrets to announce that as the result of an accident at Weston Zoyland, Somerset, to a Fairey Fawn of No. 100 Squadron, Weston Zoyland, on July 2, Flg. Off. Herbert Victor Alder, the pilot of the aircraft, was slightly injured and No. 349176 L-AC Frederick William Miller was seriously injured. L-AC. Miller died of his injuries on July 3.

The above is the official announcement of an accident that has already been reported in the Press, which most unfortunately also resulted in the death of the occupant of a private car.

The R.A.F. Medical Branch.

The Air Ministry announces that with the approval of His Majesty's Government improvements have been made in the conditions of service and emoluments of medical officers of the Royal Air Force. The Air Council attach great importance to attracting into the service the best type of medical man since on the capacity of the medical service depends to a peculiar degree the safety and efficiency of the Air Force.

The duties of a medical officer in the Air Force include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable, but the special study of the mental and physical stresses imposed upon the aviator in diverse circumstances and climates—a branch of medicine of which the civil profession has hitherto had but little experience.

Entry into the medical branch is by means of a short service commission for three years on the active list extensible for five years.

Permanent commissions are granted by selection to officers holding short service commissions and so far as practicable every entrant shall have a fifty per cent. chance of a permanent commission. Further, in order to assist short service officers who pass to the reserve after five years to set up in private practice the gratuity issuable on leaving the active list has been increased to £700, the gratuity after three years' service remaining at £350 as hitherto.

Increases of pay from 2s. to 11s. a day have been granted in all ranks above Flt. Lt.

Promotion to Flt. Lt. occurs after 2 years' satisfactory service and to Sq. Ldr. after 10 years' service reducible to 8 years in exceptional cases.

With a view to attracting into the service graduates who have had the valuable experience provided by a hospital appointment it has been decided subject to certain conditions to allow doctors who have held a resident appointment in a recognised civil hospital for not less than one year—of which, however, half may have been spent in a non-resident appointment—to enter the Air Force with one year's antedate counting for purpose of seniority, promotion, retired pay and retiring gratuity.

Every officer on entry will in future receive eight weeks' instruction in the medical problems connected with flying and in his other Air Force duties.

With a view to enabling medical officers to take at least one general or specialist course at a civil or a service medical school it has been decided to allow study leave up to nine months in all to officers during the first 16 years of their service.

The R.A.F. Dinner Club.

The Annual Dinner of the R.A.F. Dinner Club was held at the Connaught Rooms on July 2, the eve of the R.A.F. Display. Air Chief Marshal Sir Hugh Trenchard, Chief of the Air Staff, was in the Chair, with Sir Samuel Hoare, Secretary of State for Air, as the Guest of the evening and the members of the Cape Flight and two members of the Kano Flight also as guests. Almost every senior officer of the R.A.F. at present in England was also there.

After dinner, Sir Hugh Trenchard, proposing the toast of the Secretary of State, said that he hoped that in future

this would become the one great annual R.A.F. Dinner Squadron dinners and Unit dinners would be bound to die out in course of time, and he hoped that they would all amalgamate into this one gathering at which units and areas and so forth could arrange to have their own tables.

By way of demonstrating that there is nothing new under the sun, the Air Chief Marshal then quoted from "The Chronicle of England by John de Wavrin, Lord of Forestel," a work written between 1445 and 1471, which first appeared in print in 1864, the story of King Bladud, who built a city called Bath where he made baths in a Temple to the Goddess Minerva. The story has it that King Bladud made himself a pair of wings which failed so that he fell down on the Temple of Apollo in the City of London and there was dashed to pieces. Whether he flew from Bath to London is not stated. Another English scribe said that Bladud reigned over the Britons in the 581st year after David.

One would very much like to know what was the origin of the Bladud flying legend which crops up in quite a number of traditional histories. It seems to be a variation of the Icarus legend, and possibly came into England with an early wave of Mediterranean settlers.

Sir Samuel Hoare in reply said that his secretary, Mr. Bullock, was of the opinion that the first syllable of the name of that early British king did not matter and that his real name was Dud. Turning to the toast, Sir Samuel said that a Minister had to do something for his salary, so he had to speak. He thought that the term Air Council was a very imposing title, such as one would be likely to find in "The Clouds" of Aristophanes.

He said that he would like to know the feelings of the average Air Force officer about the Air Council. Probably it would be something like that of the American who wrote to a rival business man: "My stenographer, being a lady, cannot take down what I think. I, being a gentleman, cannot say it. But you, being neither, can readily divine it."

Concerning Civil Servants, he said that they were a race of men who must have consumed countless primeval forests in the paper which they have used. He said that they talked a very learned language which differed from the vernacular and he told the story of the travelling inspector from a department in Whitehall who put down in his travelling account, "Porter, 2s." On being told that the proper expression was "Porterage," he was careful in his next account to put down "Cabbage, 2s. 6d." when he had taken a taxicab.

The R.A.F. itself, he said, was an extraordinarily English institution. It started with the efforts of a few enthusiasts, including those of a young officer of the Royal Scots (referring to Sir Hugh Trenchard), who had the big idea of making our Empire defences more mobile. There were old women in the clubs in Pall Mall who said that the young men of the country had lost their nerve and he asked whether the exploits of Wing Cdr. Pulford and Sq. Ldr. Coningham pointed that way.

He said that the R.A.F. was an epitome of the New Society of the generations to come, a society which would combine theory and practice, instinct and analysis, a combination between brains and guts, an aristocracy of arms.

Wing Cdr. Pulford said that he was sensible of the honour of dining with the Club. He and his flight had had an extraordinarily good time during their flight to the Cape and back. He wished to pay a tribute to the ground organisation and said that he had had all possible help from the South African Air Force.

Sq. Ldr. Coningham said that on the flight from Cairo to Kano and back, more than 80 per cent. of the credit was due to the ground organisation. The French did all that they could on their territory and they had been much helped by ex-R.A.F. officers in Nigeria. He said that a lot of the R.A.F. "heavy artillery" (meaning senior officers) had served in West Africa, and that when there the Kano flight had tried to discover something of their previous history.

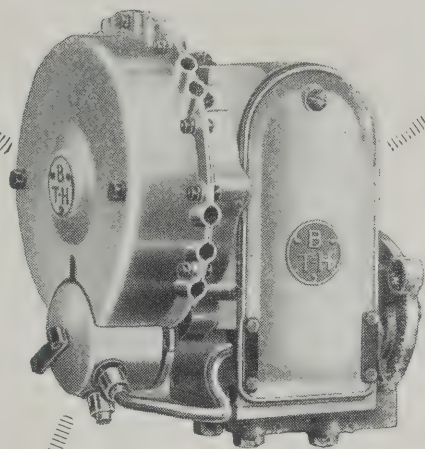
He said that the Kano journey was the first of these flights and it was essential that it should be successful. After it he had been sent to Kenya to a Governor's conference and had had the pleasure of meeting the Cape Flight at one of their landing places.

One of the most interesting things about the meeting was that this was the first occasion on which the flight had had to sling the hammocks which they had brought with them. At all the other stopping places they had had luxurious beds. Before getting into their hammocks they covered themselves with some anti-insect lotion of such evil odour that nothing could live within a mile of it.

Wing Cdr. Pulford's flight, he said, was more difficult than the Kano flight because of the number of landings which had been arranged for the machines under all sorts of conditions, whereas the Kano flight went through with the fewest possible landings. He said that flights of this sort ought to be the normal jobs of the R.A.F. in peace time.



TEAM WORK.—The Uxbridge Team, which won the One Mile Team (Open) Race at the R.A.F. Championships on June 25. The Team, from right to left, are: A.T. Turner, who also put up a new R.A.F. record for the Individual Mile; L-AC. Goodall, who also put up a new R.A.F. record for the Individual Three Miles; AC. Hester; and AC. Ferris, who also won the British Marathon Race in 1925 and 1926.



Magnetos

First and second places in every Aerial Derby have been gained by machines fitted with B.T.H. magnetos, and, as further indicating the outstanding reliability and efficiency of these magnetos, it is interesting to record that they gave continuous and faultless service during the whole of Mr. Alan Cobham's remarkable flights from London to Cape Town and back, and Croydon to Zurich and back.

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A Service Mediterranean Cruise.

Two R.A.F. Supermarine Southampton Flying-boats (Napier Lion engines) left Plymouth on July 1 on a training flight to the Mediterranean.

On the outward journey the itinerary will be Bordeaux, Marseilles, Naples, Malta, Bengazi, Sollum, Abukir; and on the return journey the route followed will be Sollum, Athens, Corfu, Malta, Naples, Marseilles, Bordeaux, Plymouth.

Eight days will be allowed between the arrival at Abukir and the start for the return journey, and during this period opportunity will be taken to visit Cyprus.

Air Defence.

The Times of July 1 states:—

It has been decided to transfer the responsibility for the inspection of Regular anti-aircraft units from the General Officer Commanding Territorial Army Air Defence Formations to the Inspector of Royal Artillery.

The Army Order which announces this change states that the General Officer Commanding Territorial Army Air Defence Formations will now, under the General Officers Commanding-in-Chief the Commands concerned and the General Officer Commanding London District, be responsible for the training and supervision of all Territorial Army air defence formations and units.

To enable him to carry out these duties one General Staff Officer, Grade 2, one Chief Engineer, and one Chief Signal Officer have been temporarily appointed to his headquarters, which will be established at Uxbridge.

R.A.F. SPORTS.

Shooting at Bisley.

The R.A.F. Meeting at Bisley started on June 29 and ended on July 2. The results were:—

TYROS' CHALLENGE CUP.—S.R.A.; 10 rounds rapid at 300 yards; 10 rounds snap at 300 yards; 10 rounds deliberate at 600 yards; h.p.s., 150 points: 1, L.A.C. Pyne, Felixstowe, 111; 2, Plt. Off. J. W. Duggan, Sealand, 100; 3, L.A.C. Hulse, Eastchurch, 98; 4, A.C. Sexton, Henlow, 93; 5, Flg. Off. J. W. Lissett, Gosport, 92; 6, A.C. Lee, Eastchurch, 90; 7, F.S. Suddaby, Halton, 89; 8, A.C. Kirby, Eastchurch, 86.

CHIEF OF AIR STAFF'S CUP.—S.R.A.; teams of eight; 600 yards deliberate; 600 yards to 100 yards with movement; 300 yards rapid; 300 yards snap; ten rounds at each practice; h.p. team score, 1,600 points: 1, Cranwell, 1,141 points; 2, Eastchurch, 1,103; 3, Manston, 1,068; 4, Felixstowe, 1,029; 5, Halton, 999; 6, Sealand, 972; 7, Gosport, 971; 8, Lee-oh-Solent, 936; 9, Upavon, 902; 10, Andover, 890; 11, Uxbridge, 863; 12, Shrewsbury, 853; 13, Flowerdown, 799; 14, Henlow, 765; 15, Worthydown, 721.

R.A.F. RIFLE CHAMPIONSHIP.—S.R.A.; two stages, each under Queen Mary conditions; h.p.s. 400 points: 1, L.A.C. Wilmott, Eastchurch (aggregate cup and medals), 164, 159, 323; 2, Flg. Off. G. C. Oldham, Manston (R.A.F.R.A. bronze medal), 159, 159, 318; 3, Flt. Lt. W. E. Staton, Felixstowe, 155, 162, 317; 4, Flt. Lt. A. E. Dark, Eastchurch, 155, 159, 314; 5, S.M. Hilliard, Halton, 155, 152, 307; 6, Sgt. Burton, Eastchurch, 143, 162, 305; 7, Flg. Off. Drummond, Cranwell, 151, 154, 305; 8, A.A. Williams, Cranwell, 160, 137, 297; 9, Cpl. Osborne, Manston, 149, 146, 295; 10, F.S. Wilson, Andover, 146, 148, 294.

THE ROYAL AIR FORCE TEAM PISTOL CHAMPIONSHIP was won by Cranwell.

THE INDIVIDUAL PISTOL AND REVOLVER CHAMPIONSHIPS were both won by Sq. Ldr. C. C. Darley (Halton), who has been permanently incapacitated by an aeroplane accident from using his right hand.



AN IRAQ RIFLE EIGHT.—No. 45 (Bombing) Squadron's Rifle Team who have won the Challenge Cup for Unit Rifle Eights for the third year in succession. The names of the team are, left to right, standing, Sgt. Justice (1926), AC. Dundas (1926), AC. Weston (1924-5-6), AC. Patterson (1926). Seated, Flg. Off. Freeman (1925-26), Sq. Ldr. Summers (1924-5-6), Sq. Ldr. Lees (1924-5-6), Flg. Off. Du Boulay (1926).

HALAHAN APERTURE LIGHT CUP.—S.R.B.: 300, 500 and 600 yards; 10 rounds at each distance; h.p.s., 150 points: 1, Sgt. R. J. Williams (Cranwell), 144; 2, Sgt. T. Creswell (Cranwell), 140; 3, Flt. Lt. J. L. K. Pearce (Cranwell), 138; 4, F.S. C. Spry (Cranwell), 136; 5, Flg. Off. R. S. Greenslade (Cranwell), 136; 6, Cpl. Goude (Gosport), 135.

Inter-Service Cricket.

R.A. v. R.A.F. :—The Royal Artillery beat the Royal Air Force in a two-days' match at Woolwich on June 29 and 30, by two wickets. The Air Force won the toss and made 210, Plt. Off. A. J. Holmes scoring 85 before he was caught out. Wing Cdr. C. H. B. Blount made 49, and Flg. Off. Croome 32. In the second innings Flg. Off. Marson and Sq. Ldr. Roberts each made 24.

The Royal Artillery made 248 and 128 for eight wickets. Sq. Ldr. C. B. Cooke took three wickets in the first innings and two in the second.

Rugby Football in Iraq.

The following note has been received from the Iraq Aircraft Depot, R.A.F. :—

Last season proved a very successful one. Twelve games were played, of which eleven were won and one was lost, with a total score of 123 points for, and 26 points against.

The biggest individual scorer was A.C. Morrison with 9 tries, and L.A.C. Collins next with 7 tries. It is worthy of note that of the R.A.F. side which played the Army, seven of the team were from I.A.D., and the R.A.F. won. Further, as a Trial Match, the I.A.D. played the rest of the R.A.F. and won by 9-6.

In spite of the hard ground Rugby is becoming more and more popular here, and the Inter-Unit games are very reminiscent of R.A.F. Cup matches at home—full of Vim and Vigour.

No. 20 Squadron Re-union Dinner.

This cheery show was held at Gatti's on July 3, with Major W. H. C. Mansfield, D.S.O., as Chairman. The usual toasts were given, and a message was sent to No. 20 Squadron, now in India.

It was resolved that the next Re-union should again take place on the R.A.F. Display date as and when fixed for 1927—this arrangement enables some members to attend both events.

All past and present officers of No. 20 Squadron who wish to attend next year are asked to keep this fixture in mind, and those who have not already done so are requested to send their permanent address to the Honorary Secretary, T. A. Metford Lewis, Postling, Nr. Hythe, Kent.

THE COLLEGE OF IMPERIAL DEFENCE.

The Prime Minister made the following statement in the House of Commons on June 29, in reply to a question by Lieut.-Col. Windsor-Clive:—

"I am able to give the following general and preliminary information in regard to the Imperial Defence College. The function of the College will be the training of a body of officers and civilian officials in the broadest aspects of Imperial strategy. The instructional staff will be drawn from the three fighting services, and the commandant will be nominated in turn by each service.

"The size of the College is being computed on a basis of 30 graduates per course, which includes vacancies held at the disposal of the Governments of the Dominions and India should they wish to avail themselves of its facilities. Arrangements are being made for the co-operation of the Civil Service in the work of the College. It is intended that the College shall begin in a small way, and gradually develop to its full sphere of usefulness in the light of experience gained in its working."

In reply to supplementary questions, the Prime Minister said that he thought the College would be situated in London and that the cost per graduate per annum would be very trifling and would not need any further Estimate.



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THE ARGOSY.

On Thursday, June 24, the first of the Argosy type of three-engined passenger cruisers, designed and built by the Armstrong-Whitworth Aircraft Co. Ltd., was publicly demonstrated at the firm's aerodrome at Whitley.

This particular machine has been ordered by the Air Ministry and appeared at the Display at Hendon. Two sisters now in course of erection are destined for Imperial Airways Ltd.

The machine is designed to seat twenty passengers, arranged in two rows of ten, as it was desired that each seat should be alongside a window. Consequently the cabin is very long (29 ft. in fact) and the nose of the fuselage and the front engine project very far in front of the wings somewhat to the detriment of appearance, but quite obviously without any other ill results. As a matter of fact, there is one definite advantage—the wing engines are so far behind the pilot that he does not suffer the overwhelming noise which he usually has to bear from engines in this position.

The fuselage of the Argosy is of steel tube construction, and a wooden floor, which also serves as a bracing, is built into the structure over the cabin section. Otherwise the cabin is fabric-covered except for the windows and doors and their framing. There is the usual outer cover, and there is a second inner cover inside. This double skin arrangement seems to be at least as sound proof as the usual plywood skin, and it is apparently quite free from any drumming.

The wings are of normal timber construction, except that steel tube spars are used over the centre section. The undercarriage is unusual for so large a machine, in that it is of the two-wheeled type.

A feature which is worthy of remark is the extremely roomy and well-arranged cockpit. It is not possible to give any full account of this here—it is hoped to do this at a later date, but for a large machine intended for long-distance work the pilot's accommodation is of vital importance.

The Argosy flies extremely well, is surprisingly manoeuvrable for so large a machine, has a markedly low landing speed, and is capable with the maximum load permitted to be carried from Whitley aerodrome of keeping level on one out of three engines. With full load, therefore, there must be an appreciable reserve with two engines running.

SPECIFICATION.

| | | |
|-----------------|---------------|-------------------------------|
| Span | 90 ft. 7 in. | Weight loaded |
| Length | 65 ft. 0 in. | 17,500 lbs. (approx.) |
| Height | 20 ft. 0 in. | Pay load 4,200 lbs. (approx.) |
| Wing area | 1,886 sq. ft. | Max. speed 115 m.p.h. |
| | | Landing speed ... 45 m.p.h. |

AN AIR SERVICE TO THE ALBERTA GOLD FIELDS.

A daily aeroplane service has been inaugurated by the Jack V. Elliot Air Service, which operates from Hudson, Ontario in connection with the newly-discovered Red Lake Gold Fields in Alberta. Hudson is two hundred and thirty miles east of Winnipeg, and numerous prospectors and supplies are entering this district as it is the recognised jumping-off place for those who intend "hitting the trail" by foot, dog-teams, or who wish to take advantage of the airway.

The air service has been in operation since Mar. 1, and the journey to the Gold Fields, a distance of a hundred and forty miles, and return, is made daily. In suitable weather passengers and mails are carried, and the fare is \$100.00, each way, whilst the mail rate is 25 cents for each ounce of letter weight. Baggage is charged for at the rate of 50 cents a pound.

This mode of transporting prospectors to the new gold rush has been so well patronised, that it is intended to establish a flying-boat service as soon as the ice breaks up on the lake.



THE CABIN OF A SUPERMARINE.—An interior view of the Supermarine Swan twin-engined commercial flying boat. Seated in front on the starboard side is Mr. Mitchell, the chief designer of the Supermarine Company, with Mr. H. Biard, the firm's chief pilot, seated behind. Standing at the foot of the companion way is Mr. F. H. Jones, of the Napier Company. The comfortable upholstery and ample head-room are noticeable features. The padded sides are presumably to guard against shocks while on the water and not in the air.

THE DUTCH AIRCRAFT INDUSTRY.

The Dutch journal *Maasbode* reports that a Royal Commission has been appointed to report on the ways and means of supporting the Aircraft Industry in Holland.

It would seem that this has not been done too soon. As is already known, Mr. Fokker has emigrated to the United States, become a naturalised American subject, and opened a factory known as the Fokker Aircraft Corporation at Hasbrouck Heights, N.J.

He has left behind him but a skeleton of his original Dutch factory. The wing building factory at Utrecht, the tube welding works at Veere has been closed, the sheds on Schiphol aerodrome are practically closed, and the main Amsterdam factory has few or no orders in hand.

Owing to the size of the Dutch Air Services the home industry cannot exist solely on Service orders. French competition abroad, which is very often more political than commercial, has had a considerable effect in the loss of foreign orders. Similarly German manufacturers have, in order to evade the provisions of the Peace Treaty, opened factories in Scandinavia, Switzerland, and Italy, and it is known that Italian factories have frequently offered aircraft at half the price quoted by the Fokker Company.

While Mr. Fokker has probably done exceedingly well for himself by continually changing his nationality, the Dutch Industry, never as a whole a very prosperous one, is now in a state of absolute poverty.

The remaining two firms, Pander and N.V.I., are in similar or worse straits. The N.V.I. have lost heavily every year since its foundation, and rumour has it that it has definitely closed down during the past month.

The Pander Company, an exceedingly prosperous firm of furniture manufacturers, have in the production of their two very efficient light aeroplanes been able to utilise their factory space, machinery and experienced woodworkers without any great outlay in capital. But in spite of the excellence of their products and their comparatively low price there is no market for such aircraft.

With the Dutch Industry in its present state the majority of the skilled workmen are being dismissed wholesale and no matter what may be the findings and results of the Royal Commission it is distressing to see that an industry that has promoted so much respect throughout the aviation world should be in such a state of depression.

THE U.S. AIR SERVICE BOMBING COMPETITION.

The Third annual Aerial Machine-Gun and Bombing Competition began at Langley Field, Va., on May 5, and was completed on May 15. Teams from every tactical squadron in the country were entered in the competition and in addition there were three teams from the Canal Zone, five teams from the U.S. Marine Corps at Quantico, Va., and three National Guard teams.

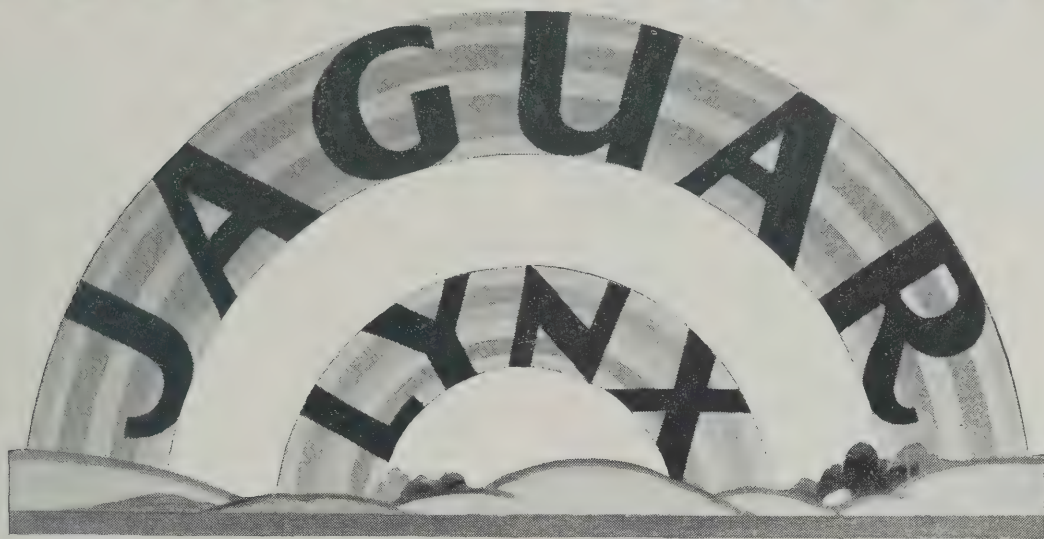
The presence of the Marine Corps provided an extra incentive to the Army pilots, and competition was keen throughout the matches, which consisted of the following events:—

Event I—Machine-gun firing with fixed guns at ground targets; Event II—Machine-gun firing with flexible guns at ground targets; Event III—Machine-gun firing with fixed guns at tow target; Event IV—Machine-gun firing with flexible guns at tow target; Event V—Low altitude bombing, 300 feet minimum; Event VI—Intermediate altitude bombing, minimum altitude 5,000 feet; Event VII—High altitude bombing, minimum altitude 8,000 feet; Event VIII—Lighter-than-air bombing, minimum altitude 3,000 feet.

The equipment generally was in good condition, and the only accidents were of a very minor nature.

The Marines did some remarkable shooting, but the Army secured first place in the pursuit events.

The first and second places in the observation and attack pilots' match were both won by the 2nd Attack Group, Kelly Field, Texas. The Observers' Match went to Mitchel Field, and the intermediate and high-altitude bombing to Lieuts. George and Harmon, of the Office of the Chief of the Air Service, with 92 per cent.



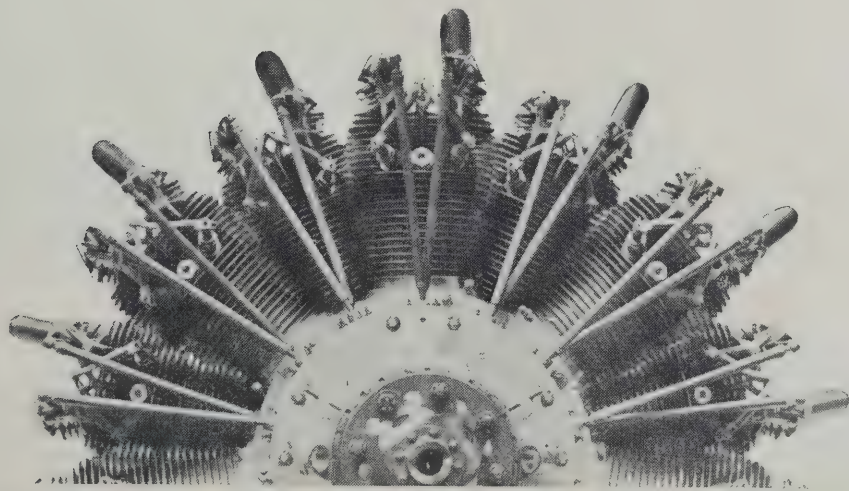
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIR TACTICS AND STRATEGY.

In the United States Naval Institute Proceedings of May, 1926, Lieut. Forest Sherman, U.S.N., contributes an article which illustrates clearly and quite convincingly the essential unity of the principles of war throughout all time, by showing that typical cases of successful tactics in air fighting during the last war were purely the result of the application of the known principles of military tactics to the particular conditions.

As an engineer and by no means a military engineer one can to some extent envy the military professions the possession of a body of teachers who so assiduously stress the immutability and the importance of fundamental principles.

Nevertheless, after having read a large number of essays devoted to the upholding of this doctrine, together with a number of somewhat acid attacks on the writers of articles and works dealing with the practice of military operations in the air because the said authors have failed to pay due homage to the orthodox, and in this case undoubtedly true doctrine, one is left with a feeling that there is more to be said than has hitherto been said by professors of the art of war concerning the particular application of the fundamental principles of war to military operations carried out under modern conditions and with modern appliances.

Lieut. Sherman's article is an advance in this respect on the majority of those which seek to inculcate the doctrine which he upholds. He seeks to prove his case—and in general very successfully—by taking specific cases of combat in the air, and showing that success in each case was the result of the application of known and established military principles to the particular circumstances.

But, writing still as an interested outsider, one feels that there is more to be said by the accepted authorities upon the art of war in order to guide those who to some considerable extent provide the fighting forces with their material equipment concerning not so much the immutable fundamental principles of war as the details of the application of those principles to particular circumstances not merely in the past but in a conceivable future.

It is not merely in the military art that fundamental principles are unchanged and unchangeable. In the art of structural engineering for example fundamental principles are to-day what they always have been and always will be. The strength and stiffness of a beam or a strut, the tenacity of a wire are governed by definite laws which are the same whether the strut, beam or tie was erected by a mediæval builder of cathedrals or a modern constructor of aeroplanes.

But between the practice of the mediæval architect and that of the modern structural engineer there is a great gulf fixed. Both, to succeed, must have complied with the fundamental principles of mechanics. The difference essentially lies in the fact that the modern engineer has available for his guidance firstly a more complete knowledge and a more accurate statement of those fundamental principles, and secondly a very greatly extended choice of structural material and of methods of working, transporting and erecting those materials.

Principles do not change, but our knowledge of them does. And as our knowledge becomes more exact, methods of applying those principles to practical purposes in an effective manner under all sorts of circumstances become, or should become, more and more susceptible of precise prediction, and less and less problems to be resolved by a process of pure trial and error.

Technique, which is the application of fundamental principles to particular circumstances, must be based on correct principles, but does not itself share the immutability of its foundations. A correct technique may be applied by an individual who is totally ignorant of the fundamental basis upon which his practice rests. Nor is it impossible to discover those who, possessing a sound grasp of fundamentals, fail to build up on this sure foundation an efficient process of practical application.

The engineer or the soldier who adopts in any given conditions the correct technique will succeed, whatever may be his mental position in regard to first principles. And he who adopts a wrong technique will fail, no matter sound his grounding in fundamentals.

It is perfectly obvious that modern military forces do not neglect technique. The whole of the training of the rank and file, and of junior officers is a training in technique, and necessarily so. Concerning that which happens to senior officers in such exalted quarters as Staff Colleges and the like, one is profoundly ignorant, but very obviously their studies must be largely concerned with the application of principles to practice—which is also a matter of technique.

But there does seem to be a singular lack of writers, other than those of the purely imaginative kind, who have attempted to show how the technique of applying modern weapons in accordance with sound principles can be developed to the best advantage.—W. H. S.

In other words, what is wanted is a special edition of

Von Clausewitz interlarded with notes illustrating how the principles laid down by him apply specifically in detail to the use of aircraft in war.—C. G. G.

Not at all. Clausewitz may stand as the authority on the philosophy of war, just as for instance Thomson and Tait stood for years as the standard authority on Natural Philosophy.

The art of the engineer is based on Natural Philosophy. But one does not seek to train the engineer in any particular branch of that profession by providing an edition of Thomson and Tait interlarded with notes as to the practical application of principles to concrete cases. One provides a manual of engineering—a text-book of technique—which cannot be permanently a standard work except in a dormant industry.

And a few essays on the technique of modern war is what is wanted.—W. H. S.

THE CURTISS MARINE TROPHY RACE.

On May 14 the race for the Curtiss Marine Trophy was held over a 73-mile course of the Anacostia Naval Air Station and was won by Lieut. T. P. Jeter flying a Curtiss F.6C. pursuit seaplane at a speed of 130.94 m.p.h.

The Curtiss Marine Trophy was offered by Mr. Glenn Curtiss in 1911 to stimulate interest in seaplanes and flying-boats. The first contest was held in 1915, and except for the years 1921, 1923, and 1925, has been competed for every year since the first race.

MR. C. M. KEYS IN ENGLAND.

Mr. C. M. Keys, Chief of the Curtiss Co. of New York, and of the National Air Transport of America, who is at present visiting this country with Mrs. Keys, was entertained at lunch on July 5 by Mr. C. R. Fairey, to meet various members of the Aircraft Industry.

Mr. FAIREY, before proceeding to the toast, congratulated Sir Frank McClean on his Knighthood.

Proceeding, Mr. Fairey said that Mr. Keys was responsible for the scientific development which won the Schneider Trophy. He said that the pioneers started with enthusiasm as almost their sole equipment. What had been lacking was business men with imagination to see the possibilities of flying and the courage to back it financially. That was what Mr. Keys had done.

Mr. Fairey said that he could only see good in international contests. They roused enthusiasm and provided matter for headlines which interested the Public either as taxpayers who would pay for Air Votes, or as investors in aircraft firms, or as passengers in the Civil Service Air Lines.

Speed was the most productive and cheapest form of research, and it influenced not only scouts but civil machines, for it meant reliable engines and economy of power, which meant safety and economy in flying. The effect of winning speed contests was good and it was bracing to lose so long as it did not become a habit.

He hoped that we should establish with America a basis of trade in Schneider Trophies. And he referred to the sportsmanship of the Americans in not claiming a walk-over in 1924.

He added that a recent attempt to alter the rules of the contest from pure speed to weight-carrying had been defeated, thanks to Col. O'Gorman's oratory. The only way to improve the conditions of speed contests was by introducing a limit to the landing speed. Referring to unlimited landing speeds he said that it was easier to be brave with a slide-rule than with a joy-stick. Aviation would only come into its own when Commercial Aviation paid, and manufacturers could be free from military orders.

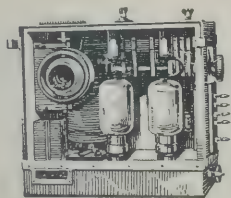
SIR SEFTON BRANCKER said he wanted to see the real commercial aeroplane. Americans had a habit of hiding their brightest light under the heaviest bushels. Out of something over 2,000,000 miles flown last year in the States, 600,000 miles had been flown at night. And their new air lines would raise that total to 5,000,000 miles next year.

Flying about the Continent he found a fine international spirit among aviation people. Apropos which he said the happiest moment of his life was when he received a letter from a Persian gentleman, addressed to "The Director of Civilisation."

Mr. KEYS, replying, said that America had once borrowed aircraft design largely from England, and he did not know that the time had come to start again. He and Mrs. Keys had come to England for a holiday. He felt embarrassed at being given credit for the success of the Curtiss Co. He said that he bought the Curtiss Co. in 1920 because he was told on a Friday that it was going broke on the following Tuesday, and it had in it five men who had useful technical knowledge. His own knowledge of aviation had only grown because in 1919 he was chosen as a member of the Commission to liquidate aircraft debts. He said that racing had been the greatest incentive of American development. He himself always wanted a big range of speed, preferably between 135 and 35 miles per hour.

AIR TACTICS

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FLYING CLUBS.

The London Aeroplane Club.

The flying during the week had to be restricted on account of the large number of machines in the vicinity of the aerodrome in connection with the R.A.F. Display.

The total flying during the week was 28 hrs. 55 mins.

The following members were given flying instruction:—G. M. Randall, F. S. Adams, W. E. P. Johnson, P. G. Lucas, O. J. Marstrand, J. H. Saffery, B. B. Tucker, E. A. Cook, T. C. Sharwood, E. A. Rayson, A. J. Richardson, C. L. Harrison, H. R. Godfrey, E. K. Blyth, A. E. Leeding, H. R. Presland, S. Nesbitt, G. N. Howe, O. J. Tapper, M. R. Berney, Major K. M. Beaumont, A. Southgate, P. O. A. Davison, G. Vlasto, G. W. Hall, H. R. Thomas, Miss O'Brien, J. A. Simson.

The following members made solo flights:—E. D. Moss, R. Malcolm, A. Lees, G. Wallcousins, J. Barros, N. Jones, A. H. Dalton, Sq. Ldr. M. E. A. Wright, Major K. M. Beaumont, Mrs. Elliott-Lynn, S. O. Bradshaw, E. S. Brough, G. H. Craig.

The flying time during the month of June broke all previous records, the total being 192 hrs. 40 mins. This was made up as follows:—Dual Instruction, 110 hrs. 30 mins.; Solo Flying by members, 66 hrs. 20 mins.; Joy-rides, 7 hrs. 10 mins.; Test Flying, 8 hrs. 40 mins.; Total, 192 hrs. 40 mins.

On Saturday, July 10, flying at Stag Lane will be suspended from 3 p.m. to 5.30 p.m. on account of the King's Cup Race and the presentation of a D.H. Moth to the Club by the Duke of Sutherland at Hendon Aerodrome.

The Lancashire Aero Club.

Report for week ending June 27. (Delayed in post.)

Machines in use G-EBLR and G-EBMQ. LV is out of action until the spare engine is returned by A.D.C. The weather has been good.

Mr. Stack gave dual instruction to:—Messrs. Leigh 1 hr. 35 mins., Fallon 1 hr. 25 mins., Dyson 1 hr. 5 mins., Anderson 1 hr. 5 mins., Costa 1 hr., Foxcroft 55 mins., Gattrell 45 mins., Brown 45 mins., Agar 40 mins., Hardy 35 mins., Goodyear 35 mins., Gerrard 30 mins., Fleming 30 mins., Gunton 25 mins., Lowe 20 mins., Collinson 20 mins., Fray 20 mins., Pattieaux 20 mins., Barnes 15 mins., Scott 15 mins. Total 7 hrs. 40 mins.

Mr. Cantrill gave dual instruction to:—Mr. Costa 10 mins.

Mr. Scholes to:—Messrs. Crossthwaite 35 mins., Davison 30 mins., Leeming 25 mins., Williams 20 mins. Total 1 hr. 50 mins.

Solo flights were made by Messrs. Leeming 1 hr. 25 mins., Michelson 1 hr. 15 mins., Slater 1 hr. 5 mins., M. Lacayo 40 mins., Cantrill 15 mins., A. Goodfellow 10 mins.

Total solo, 4 hrs. 50 mins. Tests, 1 hr. 10 mins. Total dual, 9 hrs. 40 mins.

Total hours flown in week, 15 hrs. 40 mins.

On Friday Mr. Leeming made the required flights for his "A" Certificate.

Report for week ending July 4.

Owing to the grass remaining uncut, flying has been seriously curtailed. A strip has been cut by the Club, but with the wind any way but up and down this, taking off and landing has been out of the question. However, it is understood that A. V. Roe and Co. Ltd. have now given instruction to the farmer and therefore normal flying should be resumed in the course of a day or so.

One machine in use, G-EBMQ. LV and LR were out of action during engine overhaul and repair.

The Avro Gosport has been away having minor modifications made to it at the Newton Heath works.

Mr. Stack gave dual instruction to:—Messrs. Costa 1 hr. 20 mins., Fallon 50 mins., Shires 35 mins., Leigh 30 mins., Leeke 30 mins., Hardy 25 mins., Goodyear 25 mins., Parker 25 mins., Leeming 20 mins., Fray 20 mins., Crossthwaite 20 mins., Brown 15 mins., Coppinger 10 mins. Total 5 hrs. 25 mins.

Mr. Cantrill gave dual instruction to:—Messrs. Hardy 40 mins., Hall 25 mins., Jenkinson 20 mins., Crabtree 15 mins., Mrs. Balon 10 mins. Total 1 hr. 50 mins.

Tests, 20 mins. Joy-rides, 1 hr. 55 mins. Solo flights by:—Messrs. Crabtree 30 mins., Leeming 30 mins., Goodyear 25 mins., Wilkinson 25 mins., Lacayo 10 mins., Leeke 5 mins. Total Solo, 2 hrs. 5 mins. Total time flown, 11 hrs. 35 mins.

The Newcastle-upon-Tyne Aero Club Ltd.

Report for week ending July 2.

Total flying time, 3 hrs. 20 mins.

Mr. R. N. Thompson flew with the following passengers:—Mrs. V. O. C. Marcks, Mr. W. Wingfield, Mr. F. Howard Phillips and Mr. A. H. Bell.

Mr. N. S. Todd took up the following passengers:—Mr. Clark, Mr. M. C. Thirlwell, Mr. A. H. Bell. Mr. Todd also took Mr. J. Bell on a flight round the district surrounding the aerodrome, taking aerial photographs, which have proved to be very successful.

Mr. J. D. Parkinson will join the Club as Instructor on July 10, so it is hoped that instructional flying will be as busy as heretofore.

Newcastle's New Chief Pilot.

Mr. J. D. Parkinson, who for many years has been the leading pilot of the Berkshire Aviation Tours, has been appointed Chief Instructor to the Newcastle-upon-Tyne Aero Club Ltd. in succession to the late Major Packman. Both Mr. Parkinson and the Club are to be heartily congratulated on the arrangement.

Mr. Parkinson is undoubtedly the World's Record Passenger-Carrier, having succeeded to the title after its having been held in turn by Mr. Alan J. Cobham and Mr. O. P. Jones. They, having taken to more permanent occupations than joy-riding, Mr. Parkinson carried on for an extra couple of years and his total must by now reach approximately 40,000 passengers. One fancies that it will be some considerable time before anyone else reaches such figures, for none of the other joy-ride pilots has been at the game without intermission for anything like so long as has Mr. Parkinson.

In the whole of his passenger-carrying career Mr. Parkinson has never damaged a passenger. And for some years he has not even

buckled a wheel or strained a wire in any of the machines which he has flown.

Although Mr. Parkinson is an extremely skilful and clever pilot, his motto is always "safety first," and the members of the Newcastle Club will be justified in placing absolute confidence in his judgment, not only of machines but as to whether eager pupils may be safely allowed to fly by themselves.

On the other hand, in the Committee of the Newcastle Club Mr. Parkinson may be sure of finding the backing which an energetic instructor must have if he is to make a success of his job. The Newcastle Club is fortunate in having among those who take a keen interest in it some of the most important business men in Newcastle. And there is no finer combination of sportsman and business man than is the successful Northumbrian.

After so many years of the gypsy-like life of a joy-ride pilot, Mr. Parkinson is fortunate in being able to settle down to a job where all his abundant energy can be devoted to the technique of flying, without having to bother about moving from place to place. And undoubtedly the business experience which he has had in pushing the affairs of the Berkshire Aviation Tours in the various towns which he has visited will find much fuller scope in developing public interest in aviation in the Newcastle area.

One wishes every success to the new combination.—C. G. G.

THE R.A.F. IN PARLIAMENT.

THE PTERODACTYL.

In the House of Commons on June 30, COLONEL DAY asked the SECRETARY OF STATE FOR AIR whether he was able to make any statement on the result of the tests and experiments carried out with the 30 h.p. Bristol Cherub aeroplane designed by Capt. G. T. R. Hill. Sir Samuel Hoare said that the objects of this aircraft were to obtain increased stability and control down to and beyond what was known as stalling speed. The Air Ministry considered that the results of the tests had been sufficiently promising to justify the purchase of the existing machine and the ordering of a further improved machine of the type.

SHORT SERVICE COMMISSIONS.

In the House of Commons on June 30, in reply to a question by COLONEL DAY, the SECRETARY OF STATE FOR AIR said that vacancies for short service officers in the general duties branch of the R.A.F. were periodically announced in the press and candidates were selected by a board sitting at the Air Ministry. The flow of applicants was generally satisfactory.

OFFICIAL SECRECY.

In the House of Commons on June 28, MR. GEORGE HARVEY asked the SECRETARY OF STATE FOR AIR whether, in view of recent pronouncements of his intention to foster trade abroad in British-made aircraft, he can see his way to relax the secrecy Regulations operating against the enterprise of a certain aircraft firm or firms who have constructed an aeroplane or aeroplanes purely as a commercial speculation without any guarantee from the Ministry that such machine or machines will be purchased?

THE UNDER-SECRETARY OF STATE FOR AIR: Yes, Sir. I am glad to say that it has been found possible to relax the secrecy Regulations in many ways. The whole question has been discussed with the Society of British Aircraft Constructors, who have expressed themselves as fully satisfied with the concessions which have been made.

[Of course as a body the S.B.A.C. is always satisfied with Air Ministry concessions. But the individual opinions of members frequently differ from their corporate opinion.—C. G. G.]

"WHY WE ARE VERY YOUNG."

(With very real apologies to A. A. Milne.)

I.

AFTER THE PAGEANT.

There once was a pilot who lived in a shed,
With Su-permarines (blue) and de Havillands (red),
All the day long he'd a wonderful view
Of de Havillands (red) and Su-permarines (blue).

An Expert came hurrying round, and he said,
"Tut, tut! what old notions you have in this shed.
Just look at that windmill that's gone up on test,
Don't you find that Au-togiros answer the best?"

The pilot looked round at the view and replied
(When he'd seen the windmill) that he'd tried and he'd tried,
And much the most answering things that he knew
Were de Havillands (red) and Su-permarines (blue).

The Expert stood frowning and shaking his head,
And he took up his dirty felt hat as he said:
"What the pilot requires is a change. I will go
To see some Au-togiro people I know."

The pilot lay there and he gazed at the view
Of de Havillands (red) and Su-permarines (blue),
And he knew there was nothing he wanted instead
Of Su-permarines (blue) and de Havillands (red).

They rolled up their sleeves and they turned out the shed
Of Su-permarines (blue) and de Havillands (red),
And they put in Au-togiros (yellow and white)
"And now," said the expert, "we'll soon be all right."

The pilot turned over to shut out the sight
Of the whirling Au-togiros (yellow and white).
"How lovely," he thought, "to be back in a shed
Of Su-permarines (blue) and de Havillands (red)."

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MR. COBHAM ON HIMSELF.

["My Flight to the Cape and Back." pp. 70+vi. By Alan J. Cobham, A.F.C. A. C. Black Ltd. 1s. 6d. net.]

Mr. Alan J. Cobham recently wrote an extremely good and readable book called *Skyways*. He took an immense amount of trouble over this and told us much interesting and amusing stuff about the inside history of some of his big flights.

Unfortunately he has not repeated his former success in his new book. This is perhaps natural as he told one that he did the whole job in a week-end. Moreover he has his advertisers to consider and the whole story has to be crowded into seventy pages.

Perhaps when he has more time Mr. Cobham will give us *Skyways II*, in which he will carry on with the story of his flights from where he left off in *Skyways*. Then we shall hear the true story of the flight to the Cape and we shall hear what really happened at Athens and we shall hear something of the wonderful high-speed benzol transport work.

As it is the book makes quite interesting reading, though much of it appears to be a reprint or a précis of the cables which appeared in *The Daily Mail* during the flight.

The book, which is printed entirely in photogravure, is illustrated by a number of excellent photographs indifferently reproduced or indifferent photographs somewhat improved by the photogravure process. Anyhow, it is well worth one-and-sixpence.—G. D.

ESCAPING FROM GERMANY.

["An Escaper's Log." By Duncan Grinnell-Milne, M.C., D.F.C., late Captain, R.A.F. (John Lane, The Bodley Head Ltd., Vigo Street, London, W. 306 pages, 7 illus., 3 maps. 7s. 6d. net.)]

The title of this book implies that it is more or less the diary of a prisoner of war in Germany during the War 1914-18. But this is not so. It is a brisk, cheerful narration of the adventures of a number of captives by one of them.

The mass of War literature published during the last ten years has submerged itself and from the wreckage has risen a few books that are really worth while. And Captain Grinnell-Milne's book is one of them. A prisoner for nearly three years, and concerned in numerous unsuccessful attempts to escape, he retains his courage and his sense of humour unimpaired.

His contempt for the Russian prisoners is far more pungent than anything he can say against his captors. In the beginning of the book he says:—"I am convinced that very few Russians ever undertook the organisation and planning of an escape with any hope of getting out of Germany, but were solely impelled by the necessity of having some sort of conspiracy or intrigue which would give them that delightful feeling of mystery and depression characteristic of the Russian mind On the other hand the Russians are excellent singers."

Later in the book, commenting on the fact that one prisoner of war (himself) was keeping a German officer and four men away from the front, he adds that parties of 50 to 100 Russians were guarded by only one German.

The patience and ingenuity shown by British prisoners of war in their efforts to escape is well known, but one of the most ingenious seems to have been the carving of rubber stamps, for stamping forged passes, from the soles of tennis shoes with a safety razor. A marvellous collection of material composed what they called "escaping kit," and was generally pooled.

Complete German uniforms were manufactured, the badges being made from soft metal spoons. The greatest problem was a soft felt hat which they found impossible to manufacture. But woe betide any civilian workman who entered the camp in one. He invariably lost it.

One of the most amusing incidents in the book concerns an organised search of the camp at Ströhen by Berlin detectives. The author says:—"From the time they entered the camp to the time they left, these unfortunate men were given no peace. Impeded at every turn, they were harried from one room to another. Contraband captured in one was but recaptured by the prisoners in the next. On leaving, sur-

rounded by a band of cheering prisoners, several of them complained that their pockets had been picked, and their identity cards and police papers stolen. And the very next day several more prisoners escaped."

To all those who are timid of the lurid fiction of past and future wars and bored with the depressing meanderings of decrepit warriors in the respectable press, one heartily recommends this yarn.—C. M. MCA.

VERTICAL FLIGHT.

["Le Vol Vertical et la Sustentation Indépendante" (Hélicoptères, Gyroptères, Avions-hélicoptères). By Commandant M. Lamé. Librairie de la Vie Technique et Industrielle, 14, Rue Séquier, Paris VI. Price 30 francs.]

In this little work the author, who evidently has faith in the ultimate utility of aircraft of the direct-lift type, gives an excellent account of the earlier history of types of aircraft with rotating wings up to the present day and follows this up with a clear exposition in fairly simple mathematical terms of the general theory of lifting screws—or as he prefers to call them, *sustentateurs*. This exposition covers the case of the screw rotating as a windmill, both in direct descent and in movement at an angle to the axis of rotation, and therefore covers the case of the Cierva Auto-giro.

Accounts, usually illustrated, of all the recent helicopters of which one has ever heard, and of a number of others, together with such information as is available concerning their performance on trial, completes the work, which is well worthy of study, despite bad printing and illustrations, by those who are interested in aircraft of this type.

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PAGEANTITIS.

It is said that 120,000 people were there. Of these 119,998 called it the Pageant. One of those who called it the Display was the Aviation Correspondent of *The Times* who is always meticulously accurate, and the other presumably was the individual who decided to alter the title as soon as the word "Pageant" had caught on.

As a spectacle these Pageants seem to get duller every year. But as an exposition of air force it was singularly impressive, even to the "General Public," which body's attitude towards aviation is usually singularly unintelligent. And after all we can go to Olympia at Christmas for our circus if we must have one.

The Amusement Park was chiefly amusing this year for the manner in which it was conducted. After all, the main object of the Pageant is to acquire money for the Service Charities, and the very least the Air Force personnel who are given a little brief authority can do is to give a little in return for people seriously interested in aviation.

One saw several people holding responsible positions in the industry refused permission by a junior officer to enter the park. Really sometimes it would serve people right if there was a general strike of everyone who attends such functions. This is not a personal complaint, as one had little difficulty in getting oneself and party into the sacred enclosure.

The Gloucester Gorcock evidently considered all this hot air and secrecy very foolish, for as soon as its engine was started it blew the fence of the Secrets Enclosure flat on the ground, which enabled many people to enter. Good for the Gorcock! May it soon go into production.

If the Air Ministry Secrecy Department really wants to let itself go at these Pageants, let it parade underground in the tram subway opposite to the Air Ministry and march in formation in sealed packages to Hendon. On arrival there it might be made to lock itself in a disused shed where it could watch the Pageant in secret. Properly organised this might be made quite an attractive event.

Of all the machines in the park one is bound to say that the most attractive one to the eye was the Fairey Firefly, and one admired the way it shot water, whale-like, out of the header tank on the top plane when the engine was started. If only this idea can be extended to the Auto-Giro the problem of keeping aerodromes properly watered in the dry months of the year (if any) is solved once and for all. One is bound to say that one was most disappointed in

Mr. Frank Courtney. In view of the fact that it was Wimbledon week, and in view of a certain resemblance to a certain lawn tennis player, Mr. Courtney should have carried the resemblance further still. He should have been late and kept everyone waiting (the presence of Royalty would have enhanced the value of this graceful act). On arrival he should have blackguarded everyone, burst into tears and refused to fly, and then should have driven back to his hotel, and having interviewed the reporters he should have retired to bed and cried himself to sleep. Of such stuff are champions made.

The Royal Aero Club is certainly to be congratulated on its picnic arrangements. It served a very good lunch to nearly a hundred people in comparative comfort. Much amusement was caused at tea time. When everyone was nearly boiled by the heat the only thing that would keep really cool was the kettle, which in spite of the frantic efforts of Mr. Frisbee and his hard-working staff, refused to boil. Eventually, after destroying several motor-buses, sufficient fuel was obtained and the kettle boiled.

One has every sympathy with the Haileybury schoolboys whose motor-bus overturned. Presumably the 'bus tried to emulate the aircraft.

Immediately after the Set Piece, which presumably was meant to be the Destruction of Peacehaven by an Air Force of a friendly Power (incidentally when the smoke cleared there was very little destruction), one made a bolt for it. It took only a few minutes in the Morris Oxford-and-Asquith to reach the aerodrome gates and one heaved a sigh of relief, because in former Pageants, half the battle is over once one is outside the gates.

But the Police could not allow motorists to get off so easily. Instead of allowing cars to go down Colindale Avenue and away in comfort up the broad Edgware Road, they insisted on making them turn to the left and go past the Country Club and up Hendon Hill, up which they had to go in single file. Can it be that these arrangements were in the hands of the Secrecy Department? It is up to their standard of intelligence.—G. D.

ANOTHER SINGLE-SEAT FIGHTER COMPETITION.

A single-seat fighter competition is now being held at Constantinople by the Turkish Government, the winner of the contest to be awarded a contract for fifty aircraft. Nieuport, Spad, Dewoitine and Rohrbach have sent machines, but as usual there are no British competitors.



Supermarine "Southampton" Twin Engined Flying Boat.

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SUPERMARINE

ENGLAND.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 25; Tuesday, 27; Wednesday, 27; Thursday, 27; Friday, 30; Saturday, 25; Sunday, 8.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 77, passengers 625, freight 18 tons.

AIR UNION:

Paris—London: Machines 49, passengers 323, freight 16 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 22, passengers 92, freight 2½ tons.

SABENA:

Brussels—London: Machines 12, passengers 50.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 2, passengers 12.

SPECIAL:

Machines 7, passengers 5.

Total number of trips by British Machines, 84, carrying 630 passengers. Foreign Machines, 85, carrying 483 passengers.

Comparative Figures:

Week ending July 4:

Machines, 169; Passengers, 1,113; Crews, 218; Total personnel, 1,531.

Corresponding week, 1925:

Machines, 162; Passengers, 724; Crews, 208; Total personnel, 932.

Corresponding week, 1924:

Machines, 160; Passengers, 632; Crews, 197; Total personnel, 829.

Corresponding week, 1923:

Machines, 120; Passengers, 571; Crews, 195; Total personnel, 766.

Corresponding week, 1922:

Machines, 104; Passengers, 296; Crews, 156; Total personnel, 452.

Corresponding week, 1921:

Machines, 102; Passengers, 331; Crews, 127; Total personnel, 458.

Corresponding week, 1920:

Machines, 90; Passengers, 138; Crews, 110; Total personnel, 248.

Croydon Notes.

This week will see several changes in the Civil Air Traffic Officers. Commander Deacon, who came up from Lympne several years ago to organise the system now working so successfully in the Control Tower is to take over the command of Lympne Aerodrome. After Mr. Baker left Croydon Commander Deacon took temporary charge pending the arrival of Major L. F. Richard, who for some time past has been in the Aerodrome and Licensing Branch of the Air Ministry.

Mr. Morkham, who has had a tour of duty at Lympne since he was last at Croydon, comes back again to Croydon.

The new hangars on the far side of the aerodrome are taking shape fast. The first one should be completed by the Autumn, and the move to the other side of the aerodrome will probably take place in August next year.

One wonders what effect the mass of metal in the new buildings is going to have on compass swinging. Compasses are going to have a pretty thin time in the future with all this metal work, not to mention Loth cables and high-tension current for various forms of lighting.

One is always hearing how useful is direction-finding for bringing machines to the neighbourhood of the aerodrome in bad weather. The chief objection seems to be that while the position of a machine can be given fairly accurately when it is more than ten miles from the transmitting station, machines can never be brought right to the aerodrome. Would it not help matters if the transmitting station therefore was moved some ten miles away from the aerodrome?

The air traffic this year is increasing much more steadily than in previous years. Usually there are leaps and bounds and fluctuations. This year shows a high level which increases slowly week by week. Last week Imperial Airways alone carried 625 passengers and 18 tons of freight.

When Mr. G. P. Olley arrived at Croydon last Thursday on the Hamilton, he had among his passengers Major and Mrs. Lester D. Gardner. Major Gardner is well known as the Proprietor and Publisher of *Aviation*, the leading American air paper. He had just completed a Grand Tour of all the European air routes and has also travelled by air to Baghdad and Mosul. On stepping out of the machine he looked his usual cheery self and appeared to be not in the least tired.

At the works of A.D.C. Aircraft Ltd., Mr. Perry has been doing his usual quota of test work. On Friday he was testing the Nimbus-Martinsyde, which he will fly in the King's Cup Race.—G. D.

A PARACHUTE TRIUMPH.

Mr. Scholefield has to thank a parachute that he is appearing on this page of THE AEROPLANE and not among the Personal Notices.

On Wednesday last week he was testing a Vickers-built Wibault monoplane, and for the first time he wore an Irvine parachute, regarding it rather as a nuisance.

Apparently he got the machine into a spin on its back and was unable to right it. When he saw that a crash was inevitable he jumped and landed *en parachute* in a tree and the machine crashed in a neighbouring field.

On dismounting from the tree Mr. Scholefield inquired of a passing yokel where the machine was, and the reply was "The machine's crashed in yon meadow, and the dummy's fallen in a tree."

Considering Mr. Scholefield must weigh round about sixteen stone, the incident seems to indicate a veritable triumph of parachute-making.—G. D.

A FINE FLIGHT.

Mr. Dudley Travers, who is making quite a name for himself as an air taximan, accomplished a good flight last Thursday on his D.H.9.

He was asked by Imperial Airways at 2.30 p.m. if he could get a passenger to Cherbourg by 6 p.m. to catch the *Olympic*. He left Stag Lane at once and picked up his passenger at Croydon.

He was delayed at St. Inglevert with a broken oil pipe, and got to Cherbourg just in time to see the tenders leaving the *Olympic*. He flew round the ship low down, pointing to his passenger and to the ship. The ship replied that it understood by giving two blasts on its hooter. Mr. Travers landed in a field and stopped a passing car which took the passenger to the docks, where a tender was waiting to convey him to the ship.

HOLDING TIGHT.

The Air Ministry may have been very wicked and unpatriotic to buy a three-engined Fokker monoplane, even with three British engines. But the act, and even the price, is justified by a story connected with the delivery of the machine.

On arrival at Martlesham direct from Holland it looped three times and then landed beautifully, and out stepped the pilot, Mr. Grasé, and the chief engineer of the Fokker Company, Mr. Stephan, in bowler hats and ordinary suits. Then out came a mechanic, who had come over to keep an eye on the engines, almost in a state of nervous prostration.

Towards the end of the journey he had heard something being said about doing a loop, and had objected that he was not strapped in,—as per recent Air Ministry regulations on joy-ride machines. He was told to hold onto his seat, which he did throughout the three loops. And when he landed he found that his seat was an ordinary chair resting on the floor,—not fastened to it.

DOPE.

The following letter, which has been received by Cellon (Richmond) Ltd., from D. Napier and Son, Ltd., is of interest:—

Dear Sirs,—With reference to your letter of the 24th inst., we have now had an opportunity of looking at the Napier Lion engines which were fitted to the Fairey machines recently completing the flight from Cairo to Cape Town then back to Cairo and on to England.

These engines have flown without change a total distance of 14,000 miles each, they have been through tropical heat, rain and sandstorms, and despite the varying temperatures through which they have had to work the "Cerric" Lacquer looks as good as on the day they started.

(Sgd.) F. H. Jones, Publicity Manager.

RECEIVERSHIPS.

EASTBOURNE AVIATION CO. LTD.—G. W. Plummer, of 127, Terminus Road, Eastbourne, ceased to act as Receiver on June 16, 1926.

MORTGAGES AND CHARGES.

LIGHT PLANES (LANCASHIRE) LTD.—Agreement to issue debenture dated June 2, 1926, to secure not more than £2,000, charged on such of the Company's property, present and future, as may have been or may be purchased with money supplied by the President of the Air Council or with money received by virtue of any insurance (other than third party or Employers' Liability Insurance) effected by the Company, and all money to be received by the Company by virtue of any such insurance until the same shall have been laid out by the Company in making good the loss or damage in respect of which it is received.

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PERSONAL NOTICES.

DEATHS.

ANDERSON.—On June 20, at Abu Sueir, Egypt, as the result of a flying accident, Noel Jardin Anderson, Plt. Off., R.A.F.

Mr. Anderson was a son of the Rev. Robert Anderson, of Richview Presbyterian Church, Belfast, and was educated at Campbell College, Belfast. He joined the R.A.F. in January last with a S.S. comm.

CROSS.—On June 29, at Westgate-on-Sea, Lieut. John Cross, late 3rd Batt., Royal West Kent Regt. and R.F.C., aged 38 years.

GREGG.—On June 29, at Abu Sueir, Egypt, as the result of a flying accident, L-AC. Edward Ernest Gregg, R.A.F.

MARRIAGE

BISHOP—HOWESON.—The marriage has taken place recently between Lt.-Col. A. C. Bishop, late Berkshire Yeomanry and R.A.F., to Guida, widow of Mr. Oscar Howeson.

FORTHCOMING MARRIAGES.

BROWN—WIDDOWSON.—The engagement is announced, and the marriage will shortly take place, between Flt. Lt. Leslie O. Brown, D.S.C., A.F.C., son of the late Mr. T. A. Brown, of Durban, South Africa, and Phyllis Mary, only child of the late Mr. T. G. Widdowson and of Mrs. Sneath, of Helpringham, Lincolnshire.

BURNS—SHEPHERD.—An engagement is announced between Eric Scott Burns, R.A.F., younger son of the Rev. James Burns, M.A., and Mrs. Burns, of London, and Kathleen Louise, younger daughter of Mr. and Mrs. Ernest Shepherd, of Nether Grange, Burntisland, Fife.

FIELD—WILSON.—The engagement is announced between Francis Walter Field, R.A.F., second son of the Rev. and Mrs. W. P. G. Field, of Brattleby Rectory, Lincoln, and formerly of Christ Church, Yokohama, and Kathleen Rose Ekstrand, elder daughter of Mr. and Mrs. John D. W. Wilson, London, formerly of Rangoon.

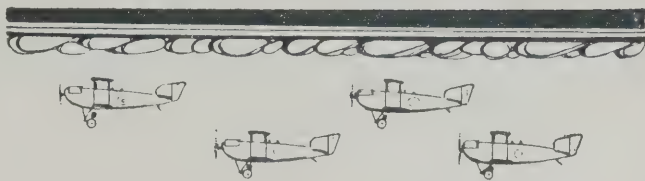
LOWIS—KENNEDY.—The engagement is announced between Lt.-Cdr. Geoffrey Lyttelton Lowis, A.F.C., R.N. (retired), elder surviving son of the late John Lowis, Government Advocate, Rangoon, and of Mrs. Lowis, of the White House, Fawkham, Kent, and Lallie Lee, only daughter of Mr. and Mrs. Walter Gardner Kennedy, of 90, The Fenway, Boston, U.S.A.

WALKER—FEILDING.—A marriage is arranged, and will take place at the end of July, between Mr. E. G. Sherbrooke Walker, M.C., late R.A.F., son of the Rev. and Mrs. G. Sherbrooke Walker, of March, Cambridgeshire, and Lady Bettie Feilding, daughter of the Earl of Denbigh, of Newnham Paddox, Rugby.

BIRTHS.

RIDLEY.—On June 26, at 55, Lancaster Gate, Hyde Park, to Naida (née McAlpine), wife of Sq. Ldr. Claude Alward Ridley, D.S.O., M.C., R.A.F.—a son.

TEDDER.—On July 4, at 27, Bloomfield Road, N.6, to Wing Cdr. and Mrs. A. W. Tedder—a son.



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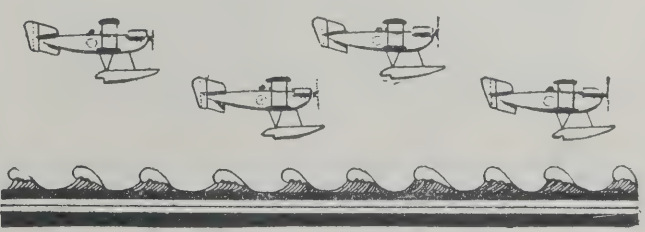
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PATENTS.

The Proprietors of British Patent No. 165086 for "Improvements in or relating to Means for Controlling the Carburettors of Internal Combustion Engines" are prepared to dispose of their Rights under this Patent. Communications please address to Dicker and Pollak, Chartered Patent Agents, 20-23, Holborn, London, E.C.1.

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THE KING'S CUP RACE.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by P. G. G. G.

Vol. XXXI. No. 2.

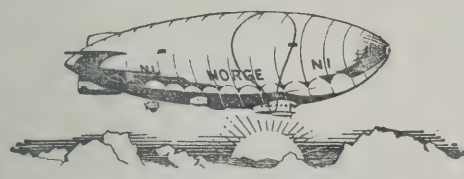
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THE START FOR THE KING'S CUP RACE.—The three first Moths (Cirrus engines) ready to start in the fog at Hendon on Friday morning. On the left the Moth entered by Mr. Hope. In the middle Mr. Broad's mount, entered by Sir Charles Wakefield, and on the right the machine flown by Mr. Sparks and entered by the Duke of Sutherland.



MARCONI WIRELESS APPARATUS

Amundsen's flight in the airship Norge across the North Pole and Major Franco's aeroplane flight to South America have proved the immense value of Marconi wireless telegraph and direction finding apparatus to long distance flying expeditions, by providing all-important meteorological reports and valuable route-finding information.

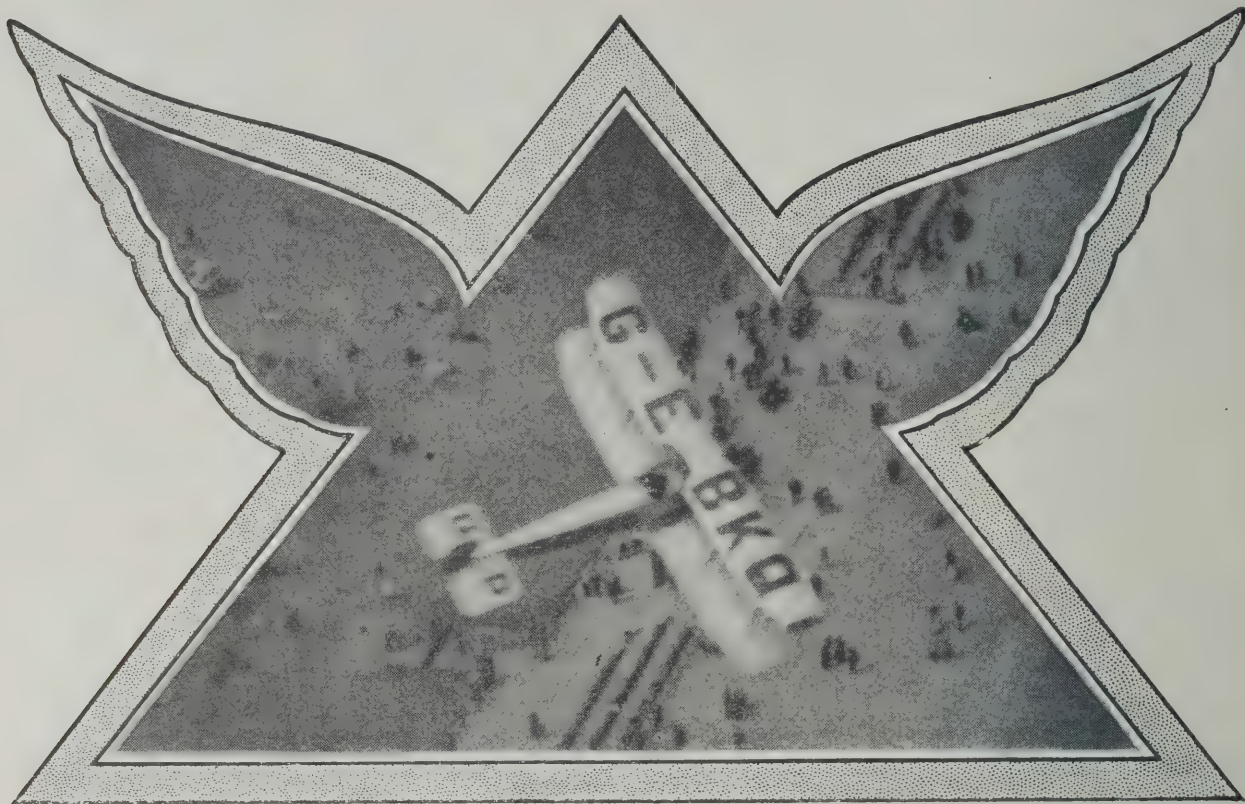
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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1926.

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ON THE KING'S CUP RACE.

No outcome of a race could be more popular than was the winning of the King's Cup by Hubert Broad on Saturday, July 10. For years Mr. Broad has been known by those who are really in touch with aviation to be one of the finest pilots in the World but he has never yet had the luck to win a really big competition.

Twice he has been grievously disappointed in Schneider Trophy contests. He has done amazingly fine trans-Continental flights, as for example his flights from London to Helsingfors and from London to Malta. He has been many times to Berlin, as well as to Prague, and several times to Spain. And in all these flights the remarkable feature has been his absolute consistency and punctuality. Also to him belongs the credit of having done the experimental night flying on the London-Paris route with Mr. Biddlecombe.

He has done all these flights without getting any publicity for them. On his merits he might well be a popular idol. But he is so quiet and retiring, and so well content to get on with his job and say nothing about it, that he is practically unknown to the outside public.

His performance on Friday and Saturday last definitely places him among the very first rank of pilots. These little light machines of comparatively low speed are naturally far more affected on a long flight by the wind than are big fast machines that simply plough through everything. Yet, as the table of lap times, so painstakingly prepared by Capt. Sayers, shows, Mr. Broad's speed varied only a matter of fifteen or twenty seconds over the various 200-mile and 166-mile laps of the course, except for one lap of the Martlesham-Cambridge course on which he lost ten minutes owing to one of the weights of his carburettor sticking. It was an astonishing exhibition of keeping a course.

CIVIL AVIATION'S BENEFIT.

The win is also of very great value to Civil Aviation. The Moth is precisely the type of machine which would popularise civilian flying if only it could be sold at about £400 instead of £800. It is the owner-pilot's machine before anything else. It is cheap to run, easy to house and simple to maintain.

If only the de Havilland Company could be sure of a market and could lay down an organisation for an output of a thousand Moths in a year, instead of having to put them through in half-dozens, they could be turned out at a price which would make them possible to hundreds of private owners. Besides which they would make possible the form-

ing of numbers of Flying Clubs to provide cheap flying for sportsmen of moderate means.

Almost exactly the same can be said of the Cirrus engine. Its design is as simple as the design of a Ford. But it has to be made of superfine material by superfine workmen. And being made in half-dozens instead of in hundreds its price is rather more than double what it ought to be if the price of the whole machine is to be got down to the private owner's level. And the price is also double what it would be if the engine were made by the thousand.

The particular Cirrus engine used by Mr. Broad was being run at a speed considerably over that at which the Cirrus type-test on the bench was done, yet it stood up perfectly to the flying test. During Friday night the engine was given a top overhaul just to make sure that everything was right. But everything was found to be in perfect order and the parts were merely put back again without anything being done to them.

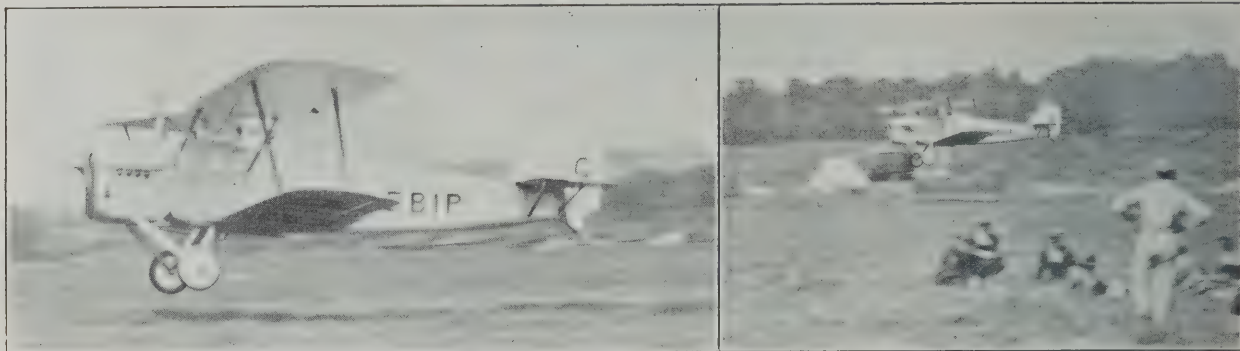
The fact that of the four standard-type Moths which started three finished the race and did over eighty miles an hour over courses which put them in every possible position to the quite strong wind which was blowing shows that the Moth is really a practical vehicle. Practically all the other so-called light aeroplanes which have ever been built have either been so slow that they have been useless for cross-country flying against a wind or else they have been designed so purely for speed that they would be dangerous for ordinary cross-country flying. The Moth has shown itself fast enough to compete with any ordinary wind and yet its landing speed is so low that it can be put down safely anywhere.

ACCESSORIES TO THE FACT.

Mr. Broad's speed of ninety miles an hour throughout the 1,400 miles of the race was done rather by his extraordinarily good course-keeping than by any great excess of speed over the other machines. But one feels pretty sure that quite a high proportion of the difference was due to the fact that he was using a Fairey-Reed airscrew instead of an ordinary wooden screw. Although the Air Ministry experts appear even now not to be quite satisfied that the Reed airscrew is airworthy it has been proved beyond doubt here and on the Continent of Europe, as it was proved two or three years ago in the United States, that the Reed type of airscrew does definitely put several miles an hour onto the speed of any machine. And one imagines that on a very small low-



THE WINNER.—Mr. Hubert Broad starting on Saturday on the De Havilland Moth (Cirrus engine, 27-60 h.p.), entered by Sir Charles Cheers Wakefield, Bart., M.P.



STARTING AND STOPPING.—A Couple of studies of Flt. Lt. Scholefield, on the Vickers Vixen, getting off and landing.

powered machine like the Moth, where every little bit of head resistance tells so much, the advantage of having a Reed airscrew must be even greater than it would be on a bigger machine.

THE GIVER OF GIFTS.

The particular Moth, G-EBMO, flown by Mr. Broad, was the most noticeable machine in the race, as it was enamelled white with red letters on it. The beautiful enamel finish naturally prompted the local humorists to nickname it "Sir Charles Wakefield's Bath," in recognition of the fact that the machine had been entered by Sir Charles Cheers Wakefield, our distinguished ex-Lord Mayor of London, the founder of the great Castrol business. And of course the usual village idiot remarked as Mr. Broad crossed the finishing line, "Now we suppose Sir Charles cheers!"

There really was a feeling of genuine satisfaction on Sir Charles' account. He has given so many prizes for aviation in the course of the last fifteen years that the Aero Club people seem to regard him as a sort of prize-mine of inexhaustible fertility. And so it is extremely pleasing to see Sir Charles actually winning a prize himself. One hopes that it may be only the precursor of many other prizes.

Here one may mention that the beautiful white and red finish of the "Bath" was a Titanine product. It was a very effective and practical job. One recommends the colour-scheme to owner-pilots who want to get away from the unpleasantly serviceable colours which have been adopted by all the flying clubs and schools.

Incidentally the A.D.C. Martinsyde flown by Squadron-Leader Jones, which was third and also won a prize for the fastest time, was treated with Titanine dope. And while one is at it one may as well add that the winner used Pratt's petrol and Castrol lubricants. Also, without troubling to verify the statement by telephone, one may add that the machine was fitted with Smith's instruments and K.L.G. plugs and B.T.H. magnetos. These winning and globe-trotting machines always are. It seems to be a habit.

THE OTHER MOTHS.

Everybody was very sorry when Captain Geoffrey de Havilland was put out of action in the third lap on the first day. He came down near Chelmsford with a broken oil pipe.

His machine was fitted with the first of the Mark II Cirrus engines, and was doing well over 100 miles an hour. The engine had only been put into the machine the previous day and there had been no opportunity of giving the installation

an extensive flying test to shake things into or out of place. The result was the broken pipe. And that reflects no discredit either on the Moth or on the engine.

Mr. Hope's trouble was apparently some obstruction in the petrol supply, but he was a pretty sick man on Friday, and, when he went off on his last lap very late in the day, one did not expect him to finish in time to be eligible to start on the Saturday. At any rate he had no real trouble with machine or engine.

The two other men to finish, Mr. Sparks and Mr. McDonough, proved that the London Aeroplane Club and the Midland Aero Club respectively were wise in their choice of instructors. Each was flying one of his Club's Moths which has been used regularly both for training and for solo flying by members who have qualified for their certificates.

The engines may perhaps have been specially overhauled for the race, but neither of them was faked in any way to get extra speed. The two pilots gave a splendid display of grit and determination and deserve to be congratulated on their performances.

Also the London Aeroplane Club and the Midland Aero Club have done a service to sport by entering their machines. The Duke of Sutherland stood sponsor for the London machine and one was glad to see one's old friend of 1910, Major Gilbert Dennison, not only as the entrant but as a very active assistant of the Birmingham machine.

It was a pity that the other flying clubs did not do likewise. But one hopes to see a regular Inter-Club flying meeting ere long.

On the whole therefore the de Havilland Company and A.D.C. Aircraft Ltd. can claim that the Moth and the Cirrus engine have had a real triumph. And they both thoroughly deserve it, for those two firms had the energy and enterprise and initiative to start out to develop precisely the type of machine which is really needed for Civil Aviation. Not only did they win the race but they have done a very great service to private flying.

THE SECOND AND THIRD HOME.

Very great credit is also due to the second man, Mr. Scholefield, and to his machine, the Vickers Vixen with Napier Lion engine. As the time-table shows, his lap times were as close to one another as were those of Mr. Broad.

The Vixen is a very big machine designed for long reconnaissances and general purposes, and is largely composed of duralumin. She does not strike one at first sight as being



THE SECOND MAN HOME.—The Vickers Vixen (Napier Lion engine, 450 h.p.), piloted by Flt. Lt. Scholefield.

Napiers Triumph!

FOUR Royal Air Force Fairey machines each fitted with a single NAPIER Lion engine, under the command of Wing Commander C. W. H. Pulford, have flown from Cairo to Cape Town, back to Cairo and thence to England—14,000 miles each machine, i.e. 56,000 miles in all.

The whole flight was carried out in formation, the prearranged schedule being adhered to throughout.

Although passing through tropical heat, rain and sand storms, on occasions leaving aerodromes over 6,000 feet above sea level, NO CHANGE OF ENGINE WAS MADE AND NO MECHANICAL TROUBLE EXPERIENCED.

Mr. C. G. Colebrook, Aeronautical Correspondent of 'The Times,' writing on this flight on June 22nd, said:—

"Both the machines and engines were perfectly standard equipment, such as are in everyday use in the Air Force, and I learned that neither in the case of machines nor engines have there been any replacements en route. The Napier Lions, which had run 56,000 engine miles, had had no overhauls of any description, not even a top overhaul during the stay at Cape Town."

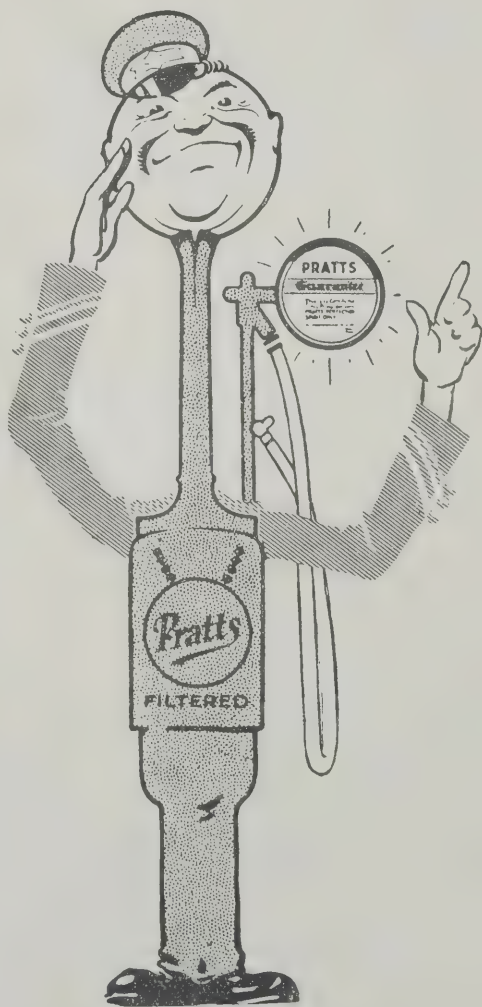
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Tests.*

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIR

King's Cup Air Race won by De Havilland (Moth) 27-60 h.p. "Cirrus" engine, piloted by Capt. H. S. Broad, entered by Sir Charles Wakefield, Bart.

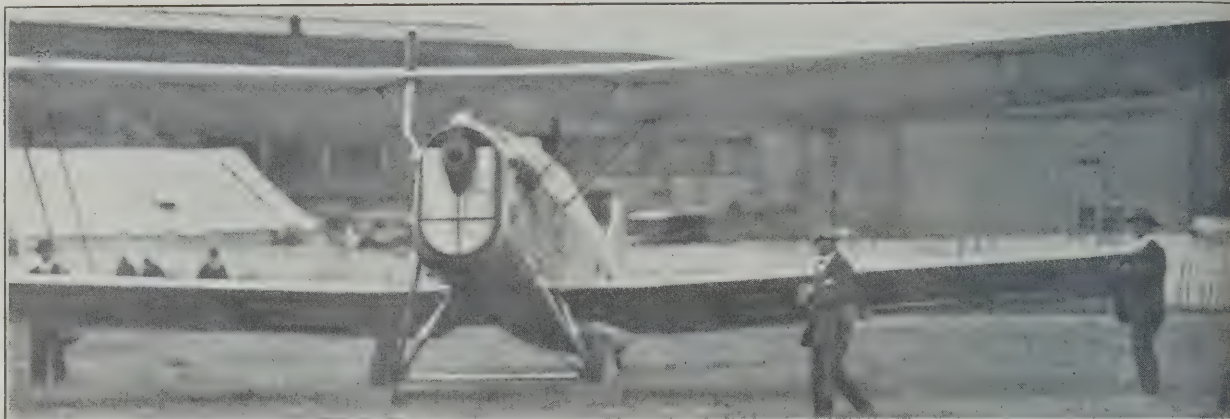
LAND

24 Hours' World's Record made on 3-litre class (Bentley car) *still held on Pratts.*

WATER

Duke of York's Trophy (Motor Boats) won by Miss M. B. Carstairs' "Newg" *on Pratts.*

Pratts



RUNNING UP.—Fit. Lt. Scholefield, who was runner-up to Mr. Broad in the Race, is here seen running up the Napier Lion engine of his Vickers Vixen before going out to the starting line.

anything in the way of a speed beast, but her time over the course shows that she is definitely fast.

Moreover she is not by any means new. The same machine, G-EBIP, took part in the King's Cup Race of two years ago—that which started from Martlesham Heath and finished at Lee-on-Solent. On that occasion, piloted by Mr. H. J. Payn, she covered the course at an average speed of 107 miles an hour, from which it would appear that her speed has been increased considerably since then.

The Vixen has been sold in quite considerable numbers to certain foreign Powers and has given every satisfaction to the purchasers, so it is a good thing for British Aviation to see the original of the type put up such a good show in the King's Cup Race.

The third man, Sq. Ldr. Jones, on the Martinsyde A.D.C.1, who also did fastest time, proved himself to be a pilot of the first class. But he showed that when he put up fastest time in the King's Cup Race on a Siskin two years ago. Also he proved that Mr. Handasyde's late-in-the-War designs are still thoroughly up-to-date.

AERO CLUB ORGANISATION.

So far as the actual organisation of the race was concerned the practical side of it was thoroughly well done. Information from the turning points came in promptly and was transmitted quickly to the people there. Machines were on their marks in good time, and all that. But considered as an organised race meeting it was an absolute fiasco.

Leaving out a few hundred people professionally concerned with aviation, and their immediate friends who had to pay for admission because they were not quite entitled to free passes, one does not believe that there were a hundred members of the general public present. No wonder that some jester reported that "Both of the crowd had walked along to look at the score-board, but she didn't seem to understand it."

If the late Richard T. Gates had had the opportunity of organising a race for a Cup presented by His Majesty the King he would have drawn a crowd to Hendon which would have made the organisers of the R.A.F. Pageant feel envious. With nothing more than the title "The Aerial Derby" he and Mr. Isaac used to draw the better part of 100,000 people to Hendon before the War in 1914.

WHAT OUGHT TO BE.

King's Cup Day at Hendon ought to rival the Royal Hunt Cup Day at Ascot as a social attraction. And perhaps it will some day, if and when the Royal Aero Club is run by people who have a gift for attracting the public instead of repelling them. Why on earth the Committee does not drag Mr. Isaac away for a few days from his present occupation, whatever it may be, somewhat as Cincinnatus was dragged away from his plough-handles to save Rome, and get him to

undertake the job of working the numbers and drawing a crowd, one cannot understand.

The public are intensely interested in Aviation, as is shown by the colossal crowds that go to the R.A.F. Pageant. And yet, with all the enthusiasm roused by the Pageant, only a week earlier, the Aero Club could only draw to Hendon for the King's Cup Race about one per thousand of the people who went to the R.A.F. show. If the whole thing had been run by the Secrecy Department of the Air Ministry, it could not have been more successful in hiding itself from the public.

Apart from nothing being done to attract the public, nothing was done to entertain the public if there had been any. It is true that machines were arriving off and on throughout both Friday and Saturday, but only those who were very keen could work up the energy to go and follow the score board and try to visualise where the different competitors were on the course. During the first lap each day there was plenty doing, because the back markers were still waiting to start when the limit men were coming in at the end of the lap. But after midday on the second and third laps everybody was away together and there was nothing doing.

It is true that on the Saturday afternoon some R.A.F. fighting machines came over and did some rather pretty flying, but the Royal Aero Club ought not to depend on the charity and goodwill of the R.A.F. to entertain its spectators.

BRIGHTER AVIATION.

The only bright spot in a couple of rather dull days was the organisation on Saturday of an impromptu Handicap Race over eight laps of approximately a three-mile course, with turning points on the top of Kingsbury Hill, round Hendon Church and round the wind-sausage at the corner of the Hendon sheds.

It was really funny, and it provided the best flying that one has seen since the beginning of the War. All kinds of queer things were dug out for it, or appeared from the Upper Atmosphere.

There was the Short Satellite, the cantilever monoplane with the all-metal fuselage, commonly known as the "Tin Balloon," which now belongs to the Seven Aero Club, flown by Flg. Off. Boyes. There were two ordinary Moths flown by Mr. Kittel and Mr. Alan Butler. And there was Capt. d'Havilland's own machine with the "hotted-up" Cirrus which had had its oil-pipe repaired.

There was Air Commodore Weir's D.H.51 with the Airdisc engine, flown by Colonel Sempill. There was Mr. Donoghue's S.E.C.M.-Amiot side-by-side two-seater biplane with a His



FASTEST TIME.—Sq. Ldr. H. W. G. Jones, M.C., on the Martinsyde A.D.C.1 (Jaguar engine, 380 h.p.), starting on his last lap.

FAIREY-REED

ALL-METAL AIRSCREW

The
KING'S CUP RACE

A DE HAVILLAND "MOTH"
Aeroplane fitted with a
FAIREY-REED AIRSCREW

F I R S T

The
HENDON HANDICAP

A SHORT "SATELLITE"
Aeroplane fitted with a
FAIREY-REED AIRSCREW

F I R S T

*Sole Manufacturers, and Licensees
of the Reed Patent Airscrew for the
British Empire.*

FAIREY AVIATION COMPANY, LIMITED
HAYES MIDDLESEX

FAIREY-REED

ALL-METAL AIRSCREW



REAL FLYING AT HENDON.—Snapshots during the Impromptu Handicap on Saturday. On the right are seen a D.H.9 and the Bristol Bloodhound.

pano engine flown by Mr. Charles Barnard of the de Havilland Company.

There were two S.E.s. belonging to the Skywriting Corporation, complete with smoke pipes. They were flown by Mr. F. L. Barnard of Imperial Airways and by Mr. "Dopey" Lingham of the Skywriters, and they gave a most hair-raising display, taking the corner over the sheds vertically either wing-tip to wing-tip or one with his wheels apparently on the top of the other one's upper plane. Having flown sedately with Mr. Barnard recently in a W.10 one was horrified at his exhibition of race flying.

There was a D.H.9 with a Jaguar engine flown by Mr. White.

There was the old Sopwith Swallow, built for the late Harry Hawker and flown by Mr. Dudley Watt in his usual hair-raising but indubitably skilful manner. There was a Renault-engined Avro belonging to the Marconi Company and flown by Mr. B. Youell. There was a D.H.51a flown by Mr. Ritchie. There was a D.H.9 with a Puma engine, flown by Mr. Reeve.

THE CAIRO CREW.

Last but not least there was the Bristol Bloodhound, which was about the most sporting effort of the lot. On Saturday she was proceeding peacefully on her way back from Cairo to Bristol after showing that it was possible to get to Cairo in two days. When they landed at Croydon Colonel Minchin and Mr. Mayer, having started from Dijon that morning, heard that there was some sort of a "do" on at Hendon and flew over to have a look at it. Thereupon they were lured to take part in the race.

The Bloodhound is not fast, she is really an excellent touring machine used to demonstrate the remarkable qualities of the Jupiter VI. But she behaved beautifully, and she took her corners like a scout.

The engine was exactly as it had started on the Cairo journey a week or so ago, and had all the seals intact, showing that nothing had been moved except sparking plugs. No doubt it was quite improper for the machine to come to Hendon and disport herself in this way, but it was really a very good thing that she did, for it gave quite a lot of people connected with aviation a chance which they would not otherwise have had to seeing the machine and its historic engine.

Incidentally one learned that the only reason why the Bloodhound did not get to Cairo in two days was because, after getting to Brindisi in a day, some over-zealous Italian officials or other put a whole lot of obstacles in the way of her departure the following morning. The result was that she was an hour and a-half late in starting. Then when she got to Sollum on the African coast there was nobody on the spot to help with the re-fuelling, so Col. Minchin and Mr. Mayer had to do the whole job themselves out of the ordinary petrol cans, besides wasting a lot of time looking for somebody who ought to have been in charge of the landing ground.

That meant a delay of pretty well another couple of hours, so that instead of getting to Cairo before dark they were overtaken by darkness while still crossing desert country and had to find their way down in the main street of an Arao town. Still, the whole thing was a fine sporting effort, and one is certain that with a machine built for the job the Jupiter



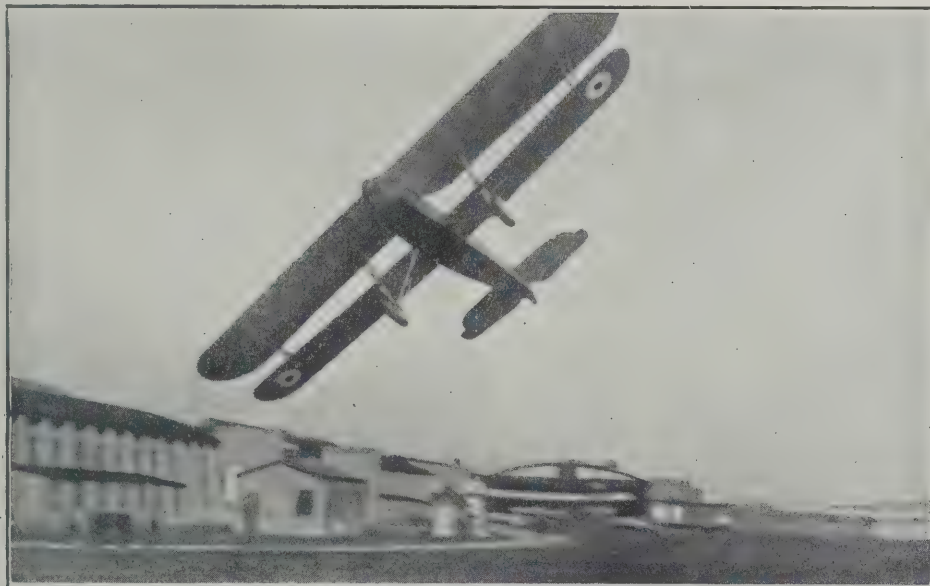
ACCELERATION.—Capt. Geoffrey de Havilland's own Moth with the "hotted-up" Cirrus engine, known officially as the Cirrus Mark II.

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THE HAWKER HERON METAL FIGHTER.



(Aeroplane Photograph.)

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TWO MIDDLE-MARKERS.—The Vickers Vixen, flown by Flt. Lt. Scholefield, and the D.H.37, flown by Mr. Alan Butler, which started off the middle mark, half-way between the limit men on the Moths and the scratch man on the Bristol.

could quite easily beat the famous French flight from Paris to Basra non-stop.

The results were that Mr. Boyes won the first heat, with Col. Sempill 2nd and Capt. de Havilland 3rd. In the second heat, Mr. Lingham was 1st, with Mr. F. L. Barnard 2nd and Mr. Ritchie 3rd. And in the final Mr. Boyes won from Col. Sempill and Mr. Lingham.

This Saturday afternoon's race showed that our pilots have lost none of their skill and that with proper organisation a race meeting at Hendon could be made just as attractive as ever it was in the days of Richard Gates. Still, of course, preaching to the Aero Club about organising race meetings is merely flogging a dead horse.

We shall probably go on as we are with these long-drawn-out rather boring shows which repel the public when they ought to attract. The really attractive performances will be put up probably a year or two hence by the Light Aeroplane Clubs when they organise their own At Home days without assistance from the Royal Club.

THOSE WHOSE LUCK WAS OUT.

The King's Cup Race of 1926 ought to have taught us some few useful lessons. At first sight it seems lamentable that out of fourteen starters only five should survive through two days' flying spread over 1,400 miles.

People may be inclined to wonder how it is that aeroplanes which are guaranteed airworthy by the Air Ministry and engines which have passed the Air Ministry's searching type-tests, should let their pilots down after flying for only a few hours and covering only a few hundred miles. Therefore it seems well to catalogue as accurately as possible the causes of failure of nine out of the fourteen who started. Let us therefore take them strictly in order:—

(A) Mr. Hope had no trouble with his engine or machine. After the second circuit on Friday he said that he had had to come down owing to grit in his petrol supply. Also he had been very air sick. He started gamely on the third circuit very late in the day and apparently was unable to get round in time to finish at closing time, which was 22.00 hours.

(B) Captain de Havilland did two circuits at high speed, but broke an oil pipe shortly after leaving Hendon on his third circuit. He came down somewhere near Chelmsford, made a temporary repair of his oil pipe and flew back to Hendon. By that time, of course, it was too late for him to proceed with the race, so he retired.

(C) The Master of Sempill also came back shortly after starting his third circuit. The arm which carried one of the valve rockers on the rearmost cylinder on the port side of his engine carried away and the whole mechanism including the rocker and the push rod fell overboard, cutting the fabric of

the lower wing, but otherwise doing no damage. He brought the machine home on seven cylinders and it was repaired and flying again by next morning.

(D) Flt. Lt. Comper was brought down by some cause which one has not yet learned, and landed in a cornfield near Duxford, where his machine turned over and damaged its nose. Everybody was particularly sorry about this, because the Cranwell Aero Club is composed of enthusiasts who are by no means wealthy, and one believes that the machine was not even insured. Entering it at all was a very fine sporting effort and one hopes that the damage was comparatively slight.

(E) Mr. Alan Butler was brought down in his first circuit near Northleach on the Cotswolds between Cheltenham and Oxford. The aluminium casting which forms the intake pipe of his engine fractured in some mysterious way and made a hole in itself into which, as he said, one could put one's fist. The broken pieces of aluminium were apparently sucked into the engine where they must have jammed inlet valves and all kinds of things. It was a most extraordinary happening, for one has never in one's life heard of an intake pipe collapsing inwards. The Nimbus engine has proved itself thoroughly reliable as well as powerful and probably all future Nimbi will fly for years without such a thing ever happening again. The only possible explanation seems to have been an undetectable flaw in the casting.

(F) Mr. Frank Courtney was also brought down in his first circuit through a valve-guide seizing, with the result that the valve stem and tappet and other things were somewhat dislocated. He landed safely on Duxford aerodrome and no damage whatever was done to the machine.

(G) Mr. Barnard came down on the old R.F.C. Aerodrome, at Oxford, the Port Meadow, because he could not keep his petrol pressure going. When he started on his last circuit on Friday there was some doubt about the pressure and it was reported that the pump or release valve or something had run dry of oil and consequently the air pressure was leaking out. The whole system was thoroughly lubricated, and when he started apparently all was well. But the trouble must have been something more serious than was then imagined. Mr. Barnard did all he could with the hand pump to keep up the pressure but when the gravity supply ran out he was unable to keep going on the pressure supply. Fortunately he reached the Port Meadow and did not have to land anywhere in the broken country to the westward, as he might have had some difficulty owing to the high landing speed of the Badminton.

Still the Jupiter engine did its job perfectly, and the forced landing had nothing whatever to do with either the engine



THE TWINS.—Mr. Frank Courtney and Mr. Perry starting on the two Nimbus-Martinsydes (A.D.C. Nimbus engines, 330 h.p.).

MOTHS

FOR THE IRISH FREE STATE
AIR FORCE

Q The de Havilland "Moth" has been selected by the Irish Government for the training of Cadets and Officers of the Free State Air Force.

Q The reliability, perfect controllability, economical running and ease of maintenance of the Moth recommend it as outstandingly the finest aeroplane for the instruction of military or civil pupils.

Q The illustration below depicts a batch of Moths at Stag Lane Aerodrome ready for delivery by air to Ireland.

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THE RACE FOR THE KING'S CUP

WON BY

Capt. H. S. BROAD, A.F.C.

ON A

DE HAVILLAND

MOTH

AT A SPEED OF

90.4 M.P.H.

THE DE HAVILLAND "MOTH"
TWO-SEATER LIGHT AEROPLANE.

*Four Cylinder Air Cooled Engine
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Dual Control.

Folding Wings.

Hand Starter in Cockpit.

*Rubber in Compression
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Luggage Compartment.

RANGE: 3½ Hours.

*PETROL CONSUMPTION:
20 miles per gallon.*

SPEED RANGE: 40-90 m.p.h.

*AEROBATIC CERTIFICATE
OF AIRWORTHINESS.*



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



AN IMPRESSION.—Sir Quentin Brand starting on the Parnall Plover (Jupiter engine, 450 h.p.).

or the actual aeroplane itself. It was in fact a case very similar to that of Capt. de Havilland, namely completing a machine in a hurry for a race and not having time in which to fly it enough to shake things into or out of position.

The two remaining failures occurred on the Saturday.

(H) Sir Quentin Brand on the Parnall Plover was apparently the victim of official carelessness. When he started on his second circuit on Saturday morning his machine started throwing out quantities of petrol. Apparently the official whose job it was to examine his petrol tank forgot to replace the filler cap and as soon as the machine got going it sprayed petrol all over the aerodrome. Fortunately it did not catch fire as it might well have done if the machine had had a long exhaust pipe. Sir Quentin Brand stopped and replaced the filler cap but did not replace the lost petrol. The result was that he ran short of petrol and had to land in Essex.

(I) The last victim of mischance was Mr. Perry who after doing two circuits on Saturday was forced down near Colchester. He got his Martinsyde down into a very small field, put the trouble right, got his engine going and then found that the field was too small for him to get out.

RACING STRAINS.

Thus it may be seen that although there was so many failures very few of them were due to anything which could have been discovered on the test-bench. Searching as are the Air Ministry type-tests for engines, the actual full-power run during the tests only amounts to about an hour or so, most of the running being done at about 90 per cent. full power.

In a race such as that for the King's Cup practically all the engines are run at considerably more revolutions per minute than is allowed even for their full-power tests. For example, Mr. Broad's Cirrus was doing 2,000 r.p.m., whereas the normal full-power revs. were about 1,800.

Also there is the fact that an engine running on a solid

steel test-bed, and driving a dynamometer is not subjected to such vibration as it is when fitted to such a flexible edifice as an aeroplane and when driving an ordinary airscrew under ordinary flying conditions.

Moreover no kind of ground test will ever find out minor initial defects in the actual installation of the power-plant such as cause broken petrol pipes and pressure leaks and other minor troubles. Therefore on the whole there seems to be a reasonable excuse for such failures as did occur.

THE RACE.

Apart from these matters there seems to be no need to describe the actual race itself in detail.

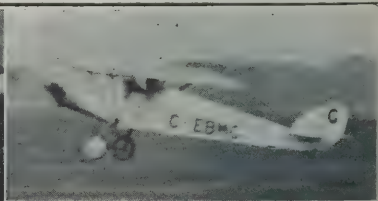
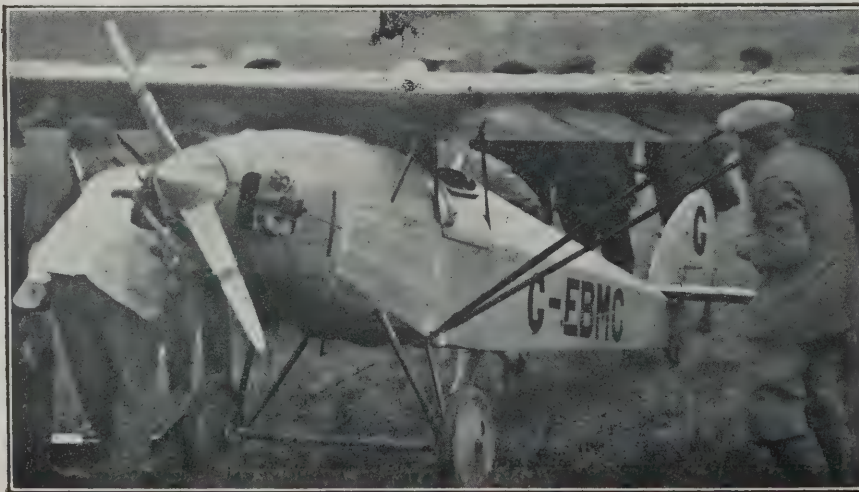
The start was delayed for 2 hours and 10 minutes on Friday morning by ground mist. Thames Valley fog raised by the morning sun was blown across the North of London by the prevailing West wind and though the air was quite clear in London itself there was first of all ground fog and then low clouds up till 09.30 hours.

Mr. Alan Butler went on a voyage of exploration out beyond Watford at about that hour, and reported that though the clouds were low it was possible to get round them all right. And reports from Coventry and Cheltenham said that the air was quite clear. At the same time reports from Cranwell said that there was a fog there.

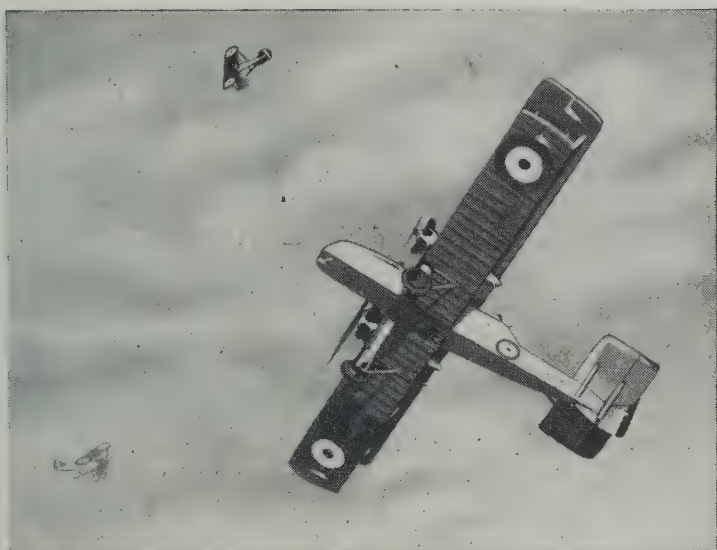
Consequently the Committee of the Royal Aero Club did in fact make a last alteration in the course actually on the starting line, as THE AEROPLANE jokingly suggested last week that they would do. And they were quite justified.

Instead of doing the Martlesham—Cambridge circuit first the competitors were sent off on the Coventry—Cheltenham circuit. By the time they had returned to Hendon the Martlesham—Cambridge circuit was clear of low cloud, so they did that circuit twice and then finished on the Coventry—Cheltenham circuit according to programme.

On Saturday, the weather being fine in the morning, the



THE MOST SPORTING EFFORT.—Flt. Lt. Comper on the Cranwell Monoplane C.L.A.3 (Bristol Cherub engine, 35 h.p.) getting ready to start, and starting, from Hendon on Friday.



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AFTER THE FINISH.—Mr. Broad taxiing in after winning the King's Cup.

competitors followed the original scheme, doing the Martlesham—Cambridge circuit first and then the Coventry—Cheltenham circuit.

Quite a good deal of credit is due to the Meteorological Department at the Air Ministry. Mr. Entwistle, who became known during the Itford Meeting as the Gust-Guesser, prophesied the weather with unholy accuracy. Mr. Barnard and Mr. Broad were particularly enthusiastic about his forecasts, in which he was aided and abetted by Mr. Deane, who operated at Hendon. By using their forecasts, Mr. Broad was able to use the wind to the best advantage, flying high or low as best suited his purpose. And Mr. Barnard, until he came to grief, was actually able to make his average speed over the ground three miles an hour faster over the triangular course than his maximum air speed.

Taking it all round probably quite a good deal of useful information was gained by people in the Aircraft Industry from the King's Cup Race. But, quite apart from its abject failure as a social function, as compared with the important Cup and Trophy events in other forms of sport, it was nothing in the least like what a King's Cup Race ought to be.

The only actually new machine in the race was Mr. Barnard's Bristol Badminton. And even that is not claimed to be a pure racing machine. Captain Barnwell, the designer, describes it as a flying test-bed for the Jupiter engine. It is merely intended to take a Jupiter through the air fast enough to learn something about what Jupiters do at high air speeds. All the same it is quite fast, and it is a beautiful piece of work, like all Bristol products.

All the other machines were quite well-known types, and some of them, such as those flown by Mr. Butler and Colonel Sempill, are by now genuine antiques, setting aside the three modified Martinsydes of which the basis is still older.

WHAT OUGHT TO BE.

To be worthy of the giver the King's Cup Race ought to be the greatest International event in the World. It ought to be more important than the Gordon-Bennett Cup or the Deutsch Cup ever was. It ought to draw foreign aeroplanes to this country just as the Derby or the St. Leger draw foreign horses. And even if the Royal Aero Club choose to confine it to British aeroplanes and engines, it still ought to produce new machines fresh and fresh every year.

Of course, one realises perfectly well that in the present state of the Aircraft Industry the aircraft firms cannot afford to build genuine racing machines year by year. And unfortunately there are no sportsmen in this country who will pay even £5,000 or £10,000 to have a racing machine built for

them though there are dozens who think nothing of giving £10,000 or £20,000 for a horse.

Possibly, when Sir Samuel Hoare and his successors have succeeded in making the British Nation air-minded the winning of the King's Cup will carry with it such prestige as does winning the Derby.

A SUGGESTION.

In the meantime, something might be done about it. For example, as one stated in this paper last week, we have in this country at least three machines which, each in its own circle, is believed to be the fastest single-seat fighter in the World. There is no earthly reason, other than the attitude of somebody or another at the Air Ministry, why the Firefly and the Avenger and the Hornbill should not have been flying in the King's Cup Race.

All those machines are designed as Service fighters, and consequently have a reasonable landing speed. At any rate any of them can be put on the ground at somewhere about fifty miles an hour and are safe to fly across country.

If the Aero Club has any hopes of making a success of the King's Cup Race next year, it ought at once to negotiate with the Air Ministry in the hopes of getting permission for manufacturers to enter their very latest single-seat and two-seat fighters in the King's Cup Race next year.

And just in case any firm does summon up the courage and finance to build and enter a genuine racing machine for next year one of the first acts of the Club ought to be to publish a regulation to the effect that every competing machine must prove its ability to land at not more than fifty miles an hour. That is how the Americans have developed their high-speed racing machines.

Pursuit ships may be as fast as they like. But they must land at a reasonable speed. And one of the best ways of securing safety first in flying is to insist on a low landing speed.

If all these wonderful record breakers which are supposed to be a-building in this country at present under the encouragement of the Air Ministry—who refused to help us to compete for the Schneider Trophy this year—are actually built by next year, they should certainly all be flown in the King's Cup Race. With these as a leading attraction and with a little intelligence in working the Press, and some effort to make the time of waiting at the aerodrome attractive, we may have quite a good King's Cup Race next year even though we have it all to ourselves, and even though the only great International Classic Trophy has been won for ever by America.—C. G. G.



AFTER THE FINISH.—Flt. Lt. Scholefield taxiing in after flying a close Second in the King's Cup Race.

The KING'S CUP AIR / RACE

1st Capt. H. S. BROAD.

D.H. "Moth," 27-60 h.p. "Cirrus" Engine.
Entrant Sir CHARLES C. WAKEFIELD, Bart.

2nd Mr. E. R. C. SCHOLEFIELD.

Vickers "Vixen," 450 h.p. Napier "Lion" Engine.
Entrant Mr. DOUGLAS VICKERS.

3rd Sq. Ldr. H. W. G. JONES.

Martinsyde ... A.D.C.1, 385 h.p. Mark IIIA, Armstrong-
Siddeley "Jaguar" Engine.
Entrant Lt.-Col. M. O. DARBY.

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TIMES AND SPEEDS IN THE KING'S CUP RACE. FRIDAY.

| Pilot. | Machine G-EB | 1st Lap, Coventry- Cheltenham, 206 m. | | 2nd Lap, Martlesham -Cambridge, 164 m. | | 3rd Lap, Martlesham -Cambridge, 164 m. | | 4th Lap, Coventry- Cheltenham, 206 m. | | Whole day, 740 m. | |
|------------------|-----------------|--|--------|---|--------|---|--------|--|--------|----------------------|--------|
| | | Time. H. M. S. | M.P.H. | Time. H. M. S. | M.P.H. | Time. H. M. S. | M.P.H. | Time. H. M. S. | M.P.H. | Time. H. M. S. | M.P.H. |
| Sparks ... | -LI | 2-25-33 | 84.8 | 2-0-41 | 81.6 | 2-0-33 | 81.8 | 2-28-0 | 83.8 | 8-54-47 | 83.0 |
| Hope ... | -ME | 2-14-44 | 91.7 | 1-48-32 | 90.6 | 2-18-14 | 71.8 | — | — | — | — |
| Broad ... | -MO | 2-14-19 | 92.1 | 1-48-41 | 90.5 | 1-58-59 | 82.8 | 2-14-42 | 92.0 | 8-16-47 | 89.3 |
| McDonough ... | -LW | 2-37-38 | 78.5 | 2-8-3 | 76.9 | 1-59-57 | 82.6 | 2-31-36 | 81.6 | 9-17-8 | 79.7 |
| de Havilland ... | -NO | 2-6-6 | 98.0 | 1-45-50 | 93.0 | — | — | — | — | — | — |
| Sempill ... | -IQ | 1-59-13 | 103.6 | 1-37-35 | 100.8 | — | — | — | — | — | — |
| Comper ... | -MC | 2-22-47 | 86.6 | — | — | — | — | — | — | — | — |
| Scholefield ... | -IP | 1-26-13 | 143.8 | 1-9-32 | 141.5 | 1-9-37 | 141.4 | 1-27-11 | 142 | 5-12-33 | 142 |
| Courtney ... | -OL | 1-26-58 | 142.4 | — | — | — | — | — | — | — | — |
| Perry ... | -OJ | 1-27-41 | 141.8 | 1-10-49 | 138.9 | 1-11-2 | 138.6 | 1-31-6 | 135.8 | 5-2-6 | 137.9 |
| Jones ... | -KL | 1-20-8 | 154.2 | 1-6-17 | 148.4 | 1-4-16 | 153.0 | 1-20-21 | 153.8 | 4-51-2 | 152.6 |
| Brand ... | -ON | 1-25-57 | 150.6 | 1-13-43 | 134.0 | 1-7-8 | 138.0 | 1-24-28 | 152.2 | 5-3-11 | 146.5 |
| Barnard ... | -MK | 1-13-8 | 161.6 | 0-59-54 | 164.3 | 0-59-7 | 168.5 | — | — | — | — |

SATURDAY.

| Pilot. | Machine | 1st Lap, Martlesham -Cambridge, 164 m. | | 2nd Lap, Coventry- Cheltenham, 206 m. | | 3rd Lap, Martlesham -Cambridge, 164 m. | | 4th Lap, Coventry- Cheltenham, 206 m. | | Whole day, 740 m. | |
|-----------------|---------|---|--------|--|--------|---|--------|--|--------|----------------------|--------|
| | | Time H. M. S. | M.P.H. | Time H. M. S. | M.P.H. | Time H. M. S. | M.P.H. | Time H. M. S. | M.P.H. | Time H. M. S. | M.P.H. |
| Sparks ... | -LI | 1-57-2 | 84.0 | 2-33-59 | 80.6 | 1-56-56 | 84.0 | 2-35-3 | 82.6 | 9-3-0 | 81.9 |
| Broad ... | -MO | 1-48-32 | 91.6 | 2-14-13 | 92.4 | 1-48-48 | 91.0 | 2-14-20 | 92.0 | 8-5-53 | 91.8 |
| McDonough ... | -LW | 1-58-12 | 83.3 | 2-27-26 | 83.9 | 1-58-48 | 82.8 | 2-31-32 | 82.0 | 8-55-58 | 82.9 |
| Scholefield ... | -IP | 1-9-53 | 140.6 | 1-26-23 | 143.2 | 1-9-23 | 141.8 | 1-26-12 | 143.4 | 5-11-51 | 142.5 |
| Perry ... | -OJ | 1-12-6 | 135.9 | 1-29-7 | 138.8 | — | — | — | — | — | — |
| Jones ... | -KL | 1-6-57 | 147.0 | 1-20-39 | 153.4 | 1-5-22 | 150.5 | 1-20-29 | 153.6 | 4-53-27 | 151.3 |

Total Times and Speeds.

1,480 miles.

| Pilot | Machine | H. M. S. | M.P.H. |
|-----------------|---------|----------|--------|
| Sparks ... | -LI | 17-57-47 | 82.4 |
| Broad ... | -MO | 16-22-40 | 90.5 |
| McDonough ... | -LW | 18-13-6 | 81.2 |
| Scholefield ... | -IP | 10-24-24 | 142.2 |
| Jones ... | -KL | 9-44-29 | 151.9 |

THE KING'S CUP COMPETITION.

Hereafter follow a complete list of the machines which actually started in the King's Cup Race, together with the names of their pilots and entrants, and the make and alleged power of their engines. Fourteen started and five finished:—

Vickers Vixen, 450 h.p. Napier Lion. (Entrant Mr. Douglas Vickers. Pilot Mr. E. R. C. Scholefield.)

Nimbus-Martinsyde, 300-330 h.p. Nimbus. (Entrant Col. J. Barrett-Lennard. Pilot Mr. Frank Courtney.)

Martinsyde-A.D.C.I., 385 h.p. Mark III A Armstrong-Siddeley Jaguar. (Entrant Lt.-Col. M. O. Darby. Pilot Sq. Ldr. H. W. G. Jones.)

D.H.51, 120 h.p. Airdisco. (Entrant Air Commodore J. G. Weir. Pilot Lt.-Col. The Master of Sempill.)

Bristol Badminton, 450 h.p. Bristol Jupiter VI. (Entrant Sir George Stanley White. Pilot Mr. F. L. Barnard.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Capt. G. de Havilland. Pilot Capt. G. de Havilland.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Sir Charles C. Wakefield, Bart. Pilot Mr. H. S. Broad.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant His Grace The Duke of Sutherland. Pilot Mr. F. G. M. Sparks.)

Nimbus-Martinsyde, 300/330 h.p. Nimbus. (Entrant Lt.-Col. M. O. Darby. Pilot Mr. H. H. Perry.)

Cranwell Monoplane C.L.A.3, 33 h.p. Bristol Cherub. (Entrant Sq. Ldr. W. Thomas. Pilot Flt. Lt. N. Comper.)

D.H.37, 300/330 h.p. Nimbus. (Entrant A. S. Butler. Pilot Mr. A. S. Butler.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant Major Gilbert Dennison. Pilot Capt. W. G. McDonough.)

D.H. Moth, 27/60 h.p. Cirrus. (Entrant W. L. Hope. Pilot Mr. W. L. Hope.)

Parnall Plover, 450 h.p. Bristol Jupiter VI. (Entrant George G. Parnall. Pilot Sq. Ldr. Sir Christopher J. Q. Brand, D.S.O., M.C., D.F.C.)



THE PRESENTATION.—The Duke of Sutherland presenting the King's Cup to Mr. Broad, with Sir Frank McClean in the background, and Sir Sefton Brancker, in between, giving a benediction.

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- SIX YEARS AGO Rolls-Royce Aero Engines in a Vickers-Vimy Aeroplane flew from ENGLAND to SOUTH AFRICA (6,281 miles).
- FOUR YEARS AGO Rolls-Royce Aero Engines in a Fairey Seaplane flew across the SOUTH ATLANTIC (3,800 miles).
- TWO YEARS AGO Rolls-Royce Aero Engines in a Fairey Seaplane flew ROUND AUSTRALIA (9,800 miles).
- TWO YEARS AGO A Rolls-Royce Aero Engine in a Fokker Aeroplane flew from HOLLAND to the EAST INDIES (10,000 miles).
- ONE YEAR AGO A Rolls-Royce Aero Engine in a Handley-Page Aeroplane flew from BRUSSELS to the BELGIAN CONGO (5,084 miles).

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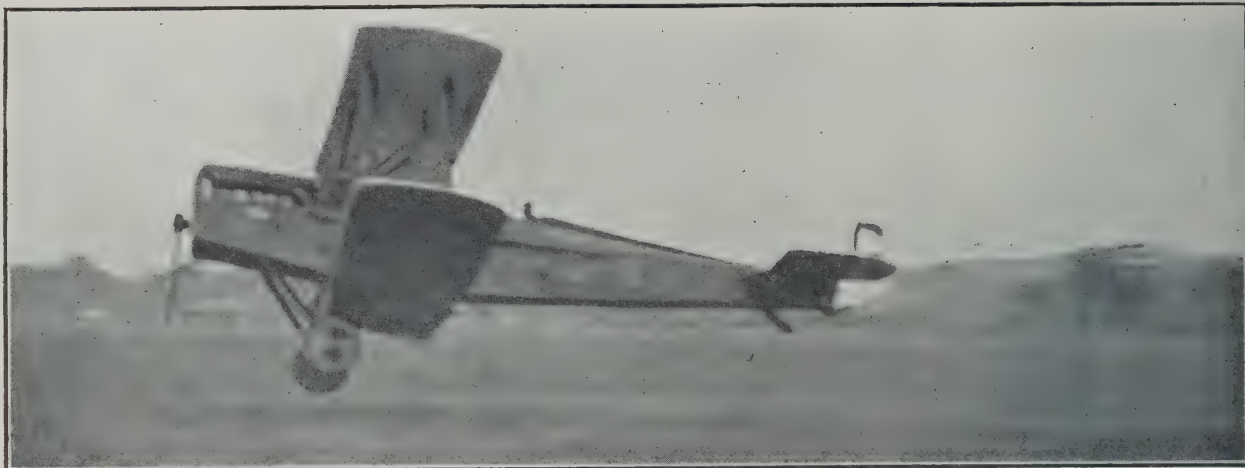
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE REVIVAL.—Mr. Alan Butler, Chairman of the De Havilland Co., starting on "Lois," which is in fact "Sylvia," now equipped with a Nimbus engine, 330 h.p.

HENDON HAVERINGS.

The fourth annual race for the King's Cup, has, as usual, caused some of the daily papers who are more concerned with net circulation figures and the issue of free life insurances than with accuracy and dignity, fairly to boil over with concentrated hot air and aeronautical nonsense. After the R.A.F. Display, which is usually treated with very great respect by the daily press, which respect is no doubt due to the excellent work done by the Air Ministry Press Section under Mr. C. P. Robertson, the King's Cup Race seems to provide an opportunity for the "air correspondents" to get really going.

Mr. F. L. Barnard provided a wonderful line with his breathing apparatus, and to anyone who was not present at Hendon (and there were not many who were!) they would be forced to conclude that he was equipped with a complete deep-sea diving apparatus.

To those who spent even only a portion of Friday at Hendon, the following tit-bits from one paper alone will bring back refreshing memories.

This (Friday) has been a day of thrills at Hendon as the struggle hour by hour waxed keener between the large and the small machines competing in the air race for the King's Cup.

The smallest machine competing was an 18 horse-power Cranwell monoplane, built by boys of the Cranwell Cadet College. Mr. W. L. Hope, the pilot, had to descend near Oxford and his machine was damaged.

A few paragraphs further down the same article we have,—

A tiny monoplane flown by Flt. Lt. Comper looked too frail to attain a speed of twenty miles an hour, let alone 105, which he is said to be able to reach.

The "Boys" at Cranwell should be delighted with this news.

Apropos Mr. Barnard, the report says:—

There was a hush of expectancy as his great Bristol airplane was wheeled on to the ground. . . . As a mechanic turned the propeller Capt. Barnard put over his mouth a mask connected by an air tube with a special supply of air. The vacuum created in the fuselage by the speed at which he travels would suffocate him unless such a measure was adopted.

Later on the report says:—

The crowd (*sic*) on the aerodrome is highly specialised. Women without glasses can recognise the make of an airplane which seems

to be no more than a speck in the sky and can discuss the merits of the various types of machines.

Now this is very disturbing news. If women without glasses can do this, then what, in Heaven's name, are they going to do with glasses?

Another paper refers to the Rev. Leslie Hamilton, and describes Mr. Courtney as the "Donoghue of the Skies," and the red and white Moth flown by Mr. Broad as the "Honey-moon Express," and so on *ad infinitum*.

Apart from the actual finish of the King's Cup Race and the impromptu handicap race got up on the Saturday afternoon, Hendon was rather a dull place. It was a pity that the short-distance race was not arranged before and publicly announced, as there can be no doubt that as a spectacle there has been nothing to compare with it in civil flying since the early Hendon days.

The hurried preparations, the lack of printed information, suitable turning points, and racing numbers, detracted from the race somewhat. But the actual flying was exceedingly good. And judging from the general opinion of the crowd present, a properly organised race meeting, to include a number of short races round fairly close turning points should attract a good crowd.

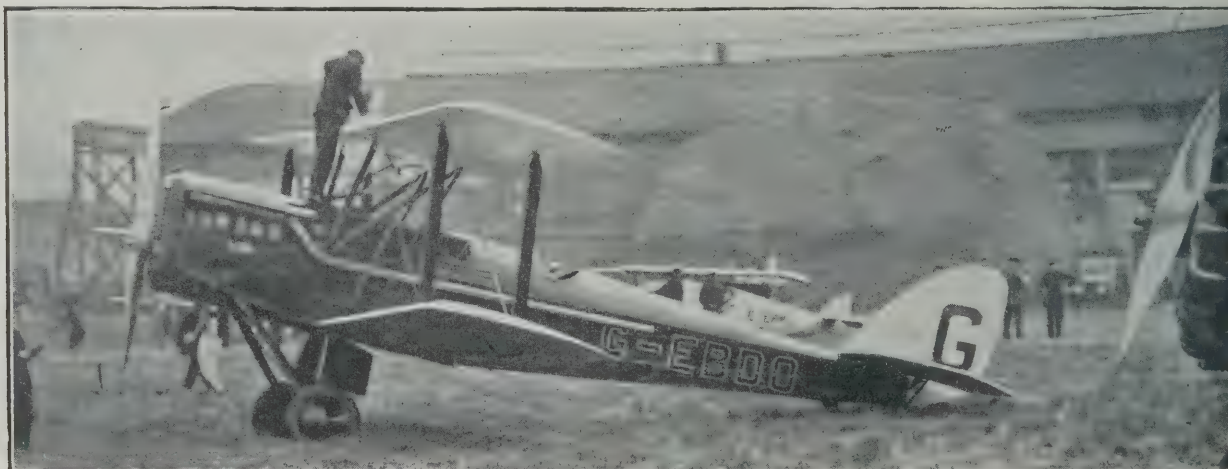
Unfortunately Hendon is now a Service aerodrome. So, although the feasibility of racing fairly high-powered machines round a small course has been demonstrated, there is no aerodrome near London suitable for the staging of an experimental meeting.

[What about Stag Lane, which is a natural arena?—Ed.]

The fight between Mr. Broad and Flt. Lt. Scholefield was the interesting feature of the King's Cup Race. But nobody realised that so exciting a finish would result as it did in both machines coming into sight together, one chasing the other across the finishing line.

There is no truth in the rumour that Mr. Knight, Flt. Lt. Scholefield's passenger, was armed with a blow-pipe and a bag of moth balls and that he could not get within shooting or blowing range in time.

Both Mr. Broad and Flt. Lt. Scholefield flew a magnificent course and Sq. Ldr. Jones must have done some secret high-speed pedalling to put up the fastest time.



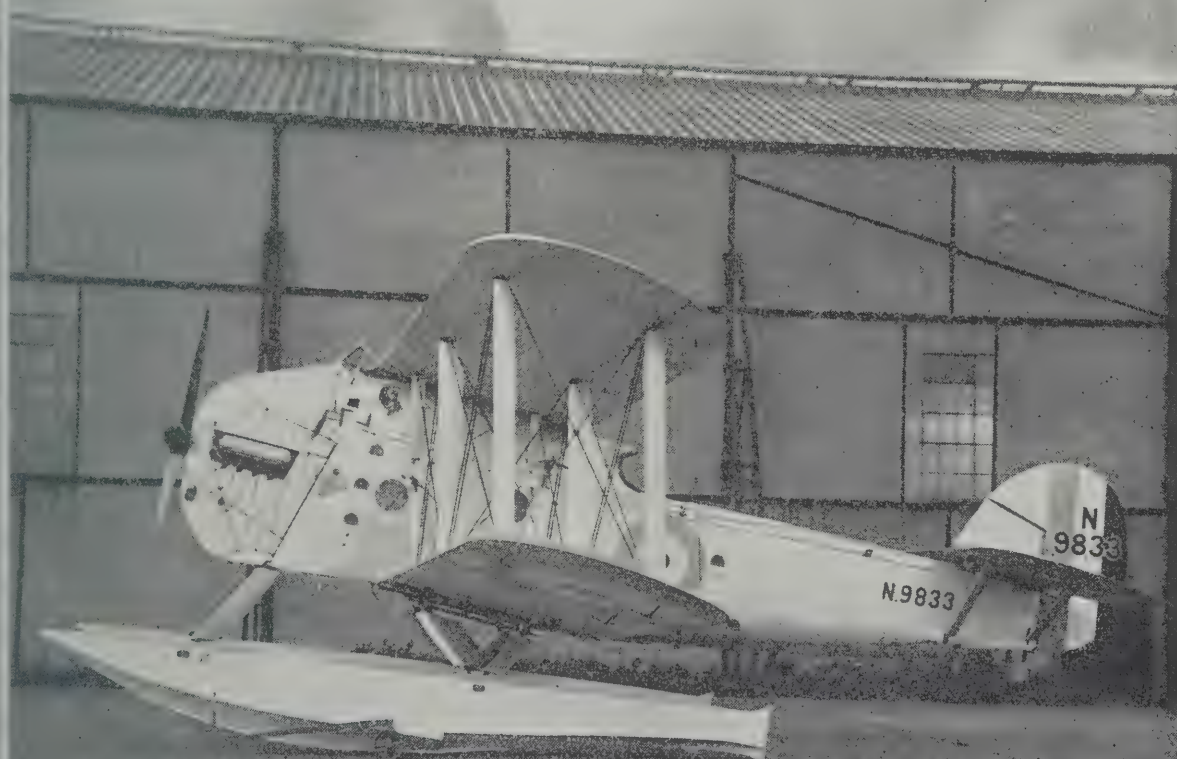
A RECONSTRUCTION.—Mr. Alan Butler's "Lois," late "Sylvia," the D.H.37, now fitted with an A.D.C. Nimbus engine, 330 h.p.

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GETTING READY TO GO.—Mr. F. L. Barnard on the Scratch Mark on the Bristol Badminton (Jupiter engine 450 h.p.).

Every credit goes to the A.D.C. Martinsyde-Jaguar and Sq. Ldr. Jones, who has now two King's Cup fastest times to his credit.

On the Friday, just before Col. the Master of Sempill took off on the D.H.51 with Air Commodore Weir, the owner of the machine, in the front seat, volumes of smoke were seen to be coming out of the passenger's cockpit. Later it was explained that Air Commodore Weir was getting his pipe going.

Soon after leaving the aerodrome Col. Sempill was seen to return to the aerodrome. At first it was thought that the Air Commodore's pipe had gone out, and that he had returned for a match, but the sight of Col. Sempill standing in front of the machine and sucking his fingers, clearly denoted that he had been trying to extract sooted plugs or something before blowing on the engine.

Touching on fashions, "balloon pants" seem to be going out of fashion, the double-breasted grey flannel suit seems to be the coming aerodrome wear.

The proximity of Lord's, and the clashing of the date of the Eton v. Harrow cricket match with the King's Cup Race accounted for the presence of one grey top hat, or "*tube officiel*," as it is called in France. This should not be taken as an advanced fashion note for Lympne.

Panama hats are also becoming popular among the more dignified followers of aviation. These should be worn without bracing to the coat lapel. A touch of "Croid" round the head-band will prevent them from being wafted away by propeller slip-streams.

Mr. Broad's "Pygmy-Plane" (*vide Press*) looked delightful in its white summer Titanine covering with red trimmings, and the pilot's aluminium-doped leather flying-cap just added a touch of originality to a very chic turn out.

Coloured brassards worn round the sleeve or tucked into the breast pocket of the jacket seem *de rigueur* and nobody who desires to be called anyone can be without one of these desirable adornments. A plentiful supply saved up from previous meetings will always ensure the owner possessing at least one of the correct colour to match the dress or costume of his companion.

One excellent example of artistic taste was the brassard worn by Mr. Handley Page, a chaste green, bearing the word "Surgeon" in gold. Apparently he arrived too late to be a Marshall or a Steward, so, the Aero Club having no brassard for a Chaplain, he had to be a Surgeon.

Speaking of dresses and costumes [No you don't.—ED.].

PRELIMINARIES TO THE KING'S CUP RACE.

On arrival at Hendon Aerodrome at about 2.30 p.m. on Thursday, only three machines were present, although all machines had to be in by 4 o'clock. The three present were the Cranwell monoplane which Mr. Comper had flown from Cranwell in the morning in 1 hour 35 mins.; the Parnall Plover on which Sir Quentin Brand was busy going round the course, and the Bristol Badminton which Mr. Barnard had brought up from Bristol in the morning.

The Bristol people evidently intended to do the thing properly for they had the most complete equipment to render first aid to the machine that one has ever seen. Mr. Barnard had a certain amount of trouble with the airscrew on the way up as the fabric stripped off one end.

Also, as happens in many perfectly streamlined machines such as the American racers, he was having a certain amount of trouble from the carbon monoxide from the engine coming into the cockpit, and, of course, most people know that carbon monoxide is a very dangerous gas. Lord Edward Grosvenor remarked when he heard this that the only thing he knew about carbon monoxide was that it turned litmus blue and why that should worry Mr. Barnard he could not imagine.

Mr. Barnard got over the difficulty by leading a pipe from the front of the engine into the cockpit and fixing the end of it to a respirator mouthpiece.

The next machine to arrive was the D.H.51, piloted by Col. the Master of Sempill, who had come over from Stag Lane. Later in the day, the owner, Air Commodore J. G. Weir, took the air as pilot.

Then from the South came the Vickers Vixen, out of which emerged Flt. Lt. Schofield of parachute fame. It was seen that he was not wearing his parachute, and, when one asked him where it was, he said that they had not finished packing it when he had left. "But," he added, with feeling, "it's coming all right."

Then came the Chairman of the de Havilland Co., Mr. A. S. Butler on his D.H.37, on which the name Sylvia has been replaced by that of Lois. The Nimbus in the nose certainly improves the streamline of the machine.

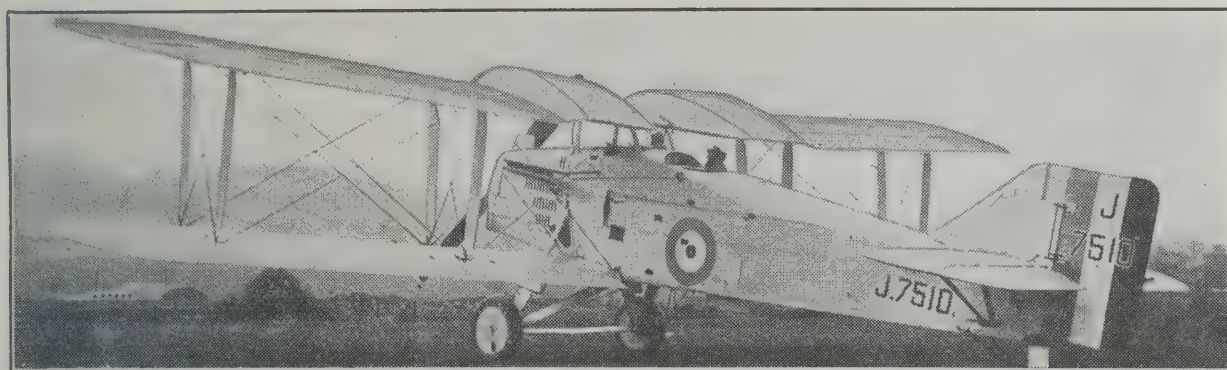
At ten minutes to four there were still nine machines to arrive. These were five Moths, two Nimbus-Martinsydes and the Martinsyde-A.D.C.1, and Mr. Dudley Watt's Swallow monoplane. All these appeared in the next ten minutes.

Mr. Dudley Watt had had a certain amount of trouble with his engine, and finally it was discovered that it was an old French Clerget and therefore, being a French engine, he was



THE PRIVATE OWNER.—Air Commodore J. G. Weir, piloted by Col. the Master of Sempill, on the D.H.51 (Airdisco engine, 120 h.p.)

WESTLAND



THE photograph is of the Yeovil Day Bomber, one of the latest machines built at the Westland Aircraft Works. It marks an important stage in the development of this type of aircraft possessing among its other features of superiority a good view for pilot and observer in all directions, stability (for accurate bombing), gravity feed of petrol from tanks in upper plane, and oleo-rubber undercarriage with wide track. It has a Rolls-Royce Condor Engine of 670 h.p. with Leitner-Watts metal propeller. The performance of the machine which was built for the Air Ministry is highly satisfactory.

At the Westland Aircraft Works, machines of all types have been designed and constructed for the British Government and for industrial purposes.

The personnel of these Works includes an expert staff which is available to consider specifications for aircraft required by Foreign and Dominion Governments or private customers. A fully equipped 4 foot wind channel is available for model experiments.

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"The race was a triumph for the little Moths, which thus proved their endurance in a long and arduous test."

—OBSERVER.



Capt. H. S. Broad, A.F.C., on the de Havilland "Moth," passing the winning post in the King's Cup Race—1,464 miles—at 90.4 m.p.h.

THE MOTH

is manufactured by

THE DE HAVILLAND AIRCRAFT CO., LTD.,

**STAG LANE AERODROME,
EDGWARE, MIDDLESEX.**

Telephone: Colindale 6160

Telegrams: "Havilland, Edgware."

THE KING

Capt. H. S.

M

SIR CHARL

at a speed of

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ENGINE RA

at FULL

16 Hours

Except for the removal of
the MOTH was in ever
was the engine

KINDLY MENTION "THE AEROPLANE"

FOR CUP

DAD, A.F.C.

TH

BY

KEFIELD, Bart.

4 miles per hour

I.P.

US

ALTERINGLY

OTTLE for

2s. 40 Secs.

atures offering resistance,
ard machine. So, also,
rk I. CIRRUS.

"As a feat of reliability the race was a triumph for the Cirrus engine, which for over eight hours a day on the two days of the race ran at full throttle."

—TIMES.



The Standard de Havilland "Moth" two-seater light aeroplane—27-60 h.p. Cirrus Engine—which won the King's Cup Race.

THE CIRRUS

is manu'a.tured by

A.D.C. AIRCRAFT, LTD.,
REGENT HOUSE, KINGSWAY,
LONDON, W.C.1.

Telephone : Regent 6240.

Telegrams : "Airdisco, London."

disqualified—as machines, engines and pilots have to be all British. This was exceedingly hard luck, as he was the only private owner without any financial interest in aviation who was taking part in the Race.

Mr. Dancy of the Handicapping Department, and of the R.A.E., had previously arrived on the scene with a haversack from which protruded half-a-dozen slide-rules or so. He and his assistant spent the rest of the afternoon measuring up the machines.

The only non-starter besides Mr. Dudley Watt was Mr. Leslie Hamilton, who had been unable to get the engine installed in his Martinsyde in time, so he became a Marshall instead.—G. D.

SUPPLEMENTARY PRIZES.

Mr. J. D. Siddeley of Coventry sent a wireless message to Hendon just prior to the start of the King's Cup Race offering a prize of £50 for the first machine home with engine of under 80 h.p. This has also been won for Sir Charles Wakefield by Mr. Broad on the Moth.

In addition to the prizes of £10, £5 and £2 10s. offered by the Royal Aero Club for the impromptu handicap race which was organised to while away the tedium of Hendon on King's Cup day, Mr. H. S. Tegner, of the Anglo-American Oil Co.—otherwise Pratt's Spirit—offered additional prizes of £10 and £5.

THE RACE AT CHELTENHAM.

Seldom has Brockworth Aerodrome, the air port for Cheltenham, and one of the turning points in the King's Cup Race, presented a more cheerful aspect than on the second day of the race.

The Gloucestershire Aircraft Company utilised the opportunity of the King's Cup Race to stimulate interest in Aviation in general, and, incidentally, to assist the Cheltenham General Hospital, to which the proceeds of the day were diverted. [Presumably financial and not casualistic proceeds.—Ed.]

The aerodrome was attractively decorated with flags and a special enclosure was made for guests. A large number of distinguished local residents were invited, and the general public was admitted for one shilling. The large number present indicated that interest in Aviation in this area is by no means lacking.

The progress of the race was marked up on large boards in view of everybody, and loud speakers informed the company of the progress of events. Mr. H. P. Folland acted as Chief Steward for the Royal Aero Club at the turning point on the aerodrome.

An excellent flying entertainment was given in the intervals between the arrivals of the King's Cup competitors. Mr. Maurice Piercey, primed by an enthusiastic public, thrilled everyone with brilliant demonstrations of the Gamecock, the Grebe, the Gannet and other Gloster machines.

The Bristol Aeroplane Company very generously loaned the services of Mr. C. R. L. Shaw and a two-seater Lucifer-engined machine for passenger flights, which proved more than Mr. Shaw could cope with, and bookings had to be suspended.

A Model Aeroplane Competition for boys under 16 was held during the afternoon and the prize was awarded to Neville Sandford, age 10.

Dancing following in No. 2 Hangar during the evening to the music of the Gloster Company's String Orchestra.

The occasion was honoured by the presence of Major Wuori, Chief of the Finnish Air Force, accompanied by Sq. Ldr. Field, who were on a visit to the Company's works. They were greatly interested in the race and left soon after lunch in order to reach Hendon in time for the finish.

WHY WE ARE VERY YOUNG.

(With very real and Sincere apologies to A. A. Milne.)

II.

CHANGING THE COURSE.

They're changing the course at the Clifford Street Club!
All of the pilots went off to a pub!
One of the entrants has just been barred,
"A secretary's life is terrible hard,"

Says Harold.

They're changing the start at the aerodrome now,
The pilots are making a terrible row.
All the Committee are having shocks,
"Mechanics are pinching other men's chocks,"

Says Harold.

They're changing the time and they're changing their mind,
The pilots all think they are very unkind.
The Moths are hooshing off into the fog,
"A secretary's life is that of a dog."

Says Harold.

They're changing the course for the fiftieth time,
Pilots are fitted with patience sublime,
There's not many people inside the grounds,
"They won't come here for a Hundred Pounds,"

Says Harold.

G. D.

THE INSTITUTION OF AERONAUTICAL ENGINEERS.

The Institution of Aeronautical Engineers greatly regrets having lost the valuable services of Mr. R. L. Howard-Flanders, A.F.R.Ae.S., A.M.I.Mech.E., M.I.Ae.E. (Hons.), as Honorary Secretary. He has found it necessary, through pressure of other duties, to resign that office. He still remains a member of the Council.

Mr. Howard-Flanders has carried on the Honorary Secretaryship since the end of 1921, when he took it over from the Founding Secretary, Mr. W. R. Douglas Shaw. As the result of Mr. Flanders' devotion and energy the Institution is to-day in a flourishing position.

The Institution is fortunate in having, as successor to Mr. Howard-Flanders, Mr. W. Villa Gilbert, M.I.Ae.E., a Member of the Council, who has very kindly offered to carry on the Honorary Secretaryship, and has been duly appointed as from July 1, 1926.

Mr. Gilbert has had a long and varied experience in aeronautics, and is one of the Founder Members of the Royal Aeronautical Society. He is devoting his energies to the continued success of the Institution of Aeronautical Engineers as a body concerned with the practical side of aeronautics. And he is particularly desirous of giving individual attention to the requirements and interests of the Members.

At the present time the Fixture List for the Winter Session is in preparation, and full details will be announced in the early autumn.

Mr. Gilbert will be pleased at any time to answer inquiries regarding the Institution and its work, either verbally or in writing. Inquirers should communicate with The Honorary Secretary, The Institution of Aeronautical Engineers, 34, Broadway, Westminster, London, S.W.1. Telephone: Victoria 5333.



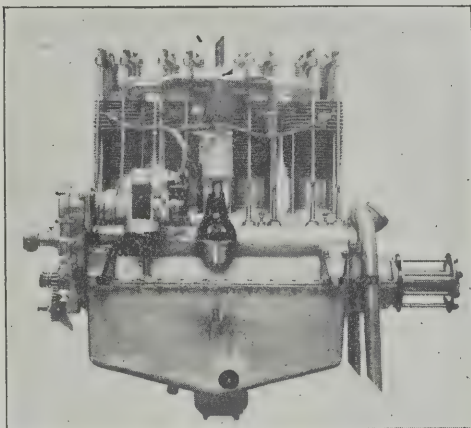
THE AIR PORT OF CHELTENHAM.—Brockworth Aerodrome, where the Gloucestershire Aircraft Co. organised a display on King's Cup Day.

A.D.C. Successes **KING'S CUP**

1st D.H. 'Moth'—27/60 h.p.
A.D.C. 'Cirrus' Engine
Pilot: Capt. H. S. Broad.

4th D.H. 'Moth'—
A.D.C. 'Cirrus.'
Pilot: Capt. F. G. M. Sparks.

5th D.H. 'Moth'—
A.D.C. 'Cirrus'
Pilot: Capt. W. J. McDonough.



Only two other machines (one being our MARTINSYDE A.D.C.1), out of the original sixteen entrants, completed the arduous course of 1,464 miles.



3rd Martinsyde A.D.C.1
385 h.p. Siddeley 'Jaguar'

This machine, piloted by
Sq.-Ldr. H. W. G. Jones,
won the prize for

FASTEST TIME

with an average speed of
151.92 m.p.h.

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THE ROYAL AIR FORCE.

The London Gazette.

July 6.

GENERAL DUTIES BRANCH.—Flt. Lt. J. L. Kirby is granted a perm. comm. in this rank (June 1).

The following Plt. Offs. are promoted to the rank of Flg. Off., with effect from and with seniority of (Mar. 26):—C. F. C. Coaker, R. F. Findlay.

The following Flg. Offs. are transferred to the Reserve, Class A:—C. B. Dove (July 2); S. H. Cooper, W. F. Davenport, R. T. Shepherd (July 4); I. M. Morris, C. E. Stuart (July 5). Flg. Off. E. A. Scales is transferred to the Reserve, Class C (July 7); Flg. Off. J. J. Brownridge is placed on the retired list (June 30); Flg. Off. (Hon. Flt. Lt.) R. Kennedy resigns his S.S. comm. (July 7); the S.S. comm. of Plt. Off. on probation V. W. Huggett is terminated on cessation of duty (July 7).

ACCOUNTANT BRANCH.—Flg. Off. R. C. Dickinson is cashiered by sentence of General Court Martial (June 10).

MEMORANDUM.—Flg. Off. F. M. Miller relinquishes his temp. comm. on ceasing to be employed with the Electric Service Works Coy. (June 16).

RESERVE OF AIR FORCE OFFICERS.—J. S. K. Inskip is granted a comm. in Class AA, General Duties Branch, as a Plt. Off. on probation (June 21).

The following Flg. Offs. relinquish their comms on completion of service:—A. W. Day (Apr. 20), C. G. Jenyns (June 26). Plt. Off. C. V. Hicks relinquishes his comm. on account of ill-health (July 7).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Flg. Off.:—No. 600 (CITY OF LONDON) (BOMBING) SQDN.—C. G. Jenyns (July 6). The following to be Flt. Lt.:—No. 601 (Co. of LONDON) (BOMBING) SQDN.—S. B. Collett (July 6). The following to be Plt. Off.:—No. 602 (CITY OF GLASGOW) (BOMBING) SQDN.—C. A. S. Parker (July 6). The following to be Sq. Ldr.:—No. 605 (Co. of WARWICK) (BOMBING) SQDN.—J. A. C. Wright to command the Sqdn. (July 6).

Appointments.

Week ending July 12.

GENERAL DUTIES BRANCH.—Wing Commanders W. R. Read, M.C., D.F.C., A.F.C., to No. 2 Apprentices' Wing, Halton, to command, 1/7. A. C. Wright, A.F.C., to No. 502 Sqdn., Aldergrove, to command, 1/5. B. E. Sutton, D.S.O., O.B.E., M.C., to No. 1 Apprentices' Wing, Halton, to command, 15/7.

Squadron Leaders C. F. Gordon, O.B.E., M.C., D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 13/5. G. C. Bailey, D.S.O., to R.A.F. Depot, Uxbridge, 25/6. K. C. Buss, to No. 2 F.T.S., Digby, 24/6. F. H. W. Guard, C.M.G., C.B.E., D.S.O., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 29/5.

Flight Lieutenants A. J. Osborn, to Electrical and Wireless School, Flowerdown, 12/7. H. Hackney, to M.A.E.E., Felixstowe, 16/7. J. Oliver, A.F.C., to Home Aircraft Depot, Henlow, 12/7. N. M. S. Russell, to H.Q., Iraq Command, 2/7.

Flying Officers R. Jones, to No. 31 Sqdn., India, 4/6. C. Sutton, to No. 47 Sqdn., Egypt, 26/6. J. B. H. Rogers, to No. 5 Sqdn., India, instead of to No. 31 Sqdn., India, as previously notified, 15/5. H. V. David, to No. 1 Stores Depot, Kidbrooke, 16/7. W. G. Pudney, to No. 43 Sqdn., Henlow, 15/7. R. G. Hart, to No. 24 Sqdn., Kenley, on appointment to a S.S. Comm., 2/7. J. Bullock, to Home Aircraft Depot, Henlow, 13/7. F. S. Waincoat, to E. and W. School, Flowerdown, 13/7. W. H. Jinman, M.B.E., to R.A.F. Base, Calshot, 16/7. R. W. Steele, to No. 55 Sqdn., Iraq, 12/6. W. W. Bradford, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 14/6. J. P. Hufham, V.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 9/6. R. Mundy-Cox, to R.A.F. Base, Calshot, 7/7. P. J. A. Hume-Wright, to School of Naval Co-operation, Lee-on-Solent, on transfer to Home Estab., 14/6. C. U. G. Tristram, to No. 11 Sqdn., Netheravon, 22/6.

Pilot Officers E. T. M. Smalley, to No. 2 F.T.S., Digby, 17/7. J. R. Addams, to No. 2 F.T.S., Digby, 17/7.

MEDICAL BRANCH.—Flight Lieutenant V. S. Ewing, M.B., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 13/6.

Flying Officers R. F. G. Dickson, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 5/6. J. D'I. Rear, to Research Laboratory and M.O.S. of I., London, 1/7. L. Freeman, to Research Laboratory and M.O.S. of I., London, on appointment to a S.S. Comm., 1/7.

STORES BRANCH.—Flying Officers W. H. Bowden, to No. 25 Sqdn., Hawkinge, 1/7. F. H. Bedford, M.C., M.M., to Air Ministry, 15/7.

ACCOUNTANT BRANCH.—Flying Officer S. C. George, to No. 4 F.T.S., Egypt, 14/6.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident at Razmak, India, to a Bristol Fighter of No. 5 Sqdn., Risalpur, on July 6, Flg. Off. Clement Conrad Harris, the pilot of the aircraft, was killed, and No. 330945 L-AC. Cecil Robert Avery, died of his injuries.

A Royal Investiture.

His Majesty the King held an investiture at Buckingham Palace on July 12.

Among those in attendance upon His Majesty was Air Marshal Sir John Salmond, R.A.F., Principal Air Aide-de-Camp.

Among those also present was Group Captain P. F. Fellowes, R.A.F.

The following were among those who were introduced into the presence of the Sovereign when the King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE, MILITARY DIVISION: Received the honour of Knighthood.—Air Vice-Marshal John Steel.

THE MOST HONOURABLE ORDER OF THE BATH: Civil Division.—Dr. George Simpton.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE: COMMANDER, Military Division.—Wing Commander Frank Kirby, V.C., R.A.F.

THE DISTINGUISHED SERVICE ORDER: COMPANION.—Squadron Leader James Robb, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE: OFFICERS.—Flight Lieutenant Hedley Drew, R.A.F., Flight Lieutenant Albert Wombwell, R.A.F. MEMBERS.—Flight Lieutenant John Amers, R.A.F., Flying Officer William Jinman, R.A.F.

His Majesty then conferred decorations as follows:—

THE DISTINGUISHED FLYING CROSS.—Flight Lieutenant Francis Luxmoore, R.A.F., Flying Officer Harry Reid, R.A.F.

THE AIR FORCE CROSS.—Squadron Leader Arthur Coningham, R.A.F., Flight Lieutenant John Chick, R.A.F., Flight Lieutenant Archibald Rankin, R.A.F.

The R.A.F. Memorial Fund.

The Report of the activities of the Executive Committee of the R.A.F. Memorial Fund for the period between Apr. 1 and June 30, shows that a total grant of £1,459 7s. 9d. was made to ex-members of the R.A.F. The number of cases dealt with was 192, and included maintenance during sickness, grants for clothing, rail fares, payment of arrears of rent, purchase of tools, etc.

A total of 43 grants were made to post-war members of the R.A.F., amounting to £268 11s. These grants were chiefly for maintenance, education, and doctors' bills.

The Post-War R.A.F. Iraq Dinner.

The second Post-War R.A.F. Iraq dinner took place at the Hotel Cecil on July 3, the evening of the R.A.F. Display, there being 105 present.

Air Marshal Sir John Salmond was in the chair, and Air Commodore A. E. Borton was Vice-Chairman.

After the Chairman had proposed the health of His Majesty the King, Air Commodore Borton proposed the health of Sir John Salmond, to which the latter replied in a most interesting speech.

Air Commodore Longmore then congratulated the Committee on the success of the evening.

The String Band of the Royal Air Force played during dinner.

A cable was despatched at the request of the Chairman conveying good wishes to those at present serving in Iraq and expressing a hope to welcome them at next year's dinner.

Among those present were:—Air Vice-Marshal Sir John Salmond, Air Commodore A. E. Borton, Air Commodore A. M. Longmore, Group Captain P. F. M. Fellowes, Group Captain C. R. S. Bradley, Wing Commanders A. D. Cunningham, A. ap Ellis, S. W. Smith, G. W. Williamson, S. R. Crawford, G. C. St. P. de Dombasle, D. L. Allen, P. L. Robinson, D. C. S. Evill, V. Gaskell-Blackburn, L. Auker, R. E. Saul, J. S. T. Bradley, and E. R. Manning.

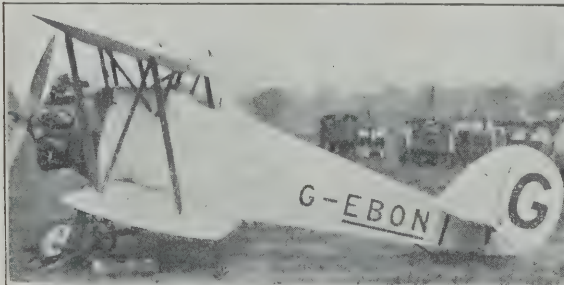
The Royal Tournament.

The Royal Tournament started at Olympia on July 8, and the last performance will be on July 24.

The Display of Physical Training by the Royal Air Force does not begin until the afternoon of July 16. Nevertheless it will not harm those who are interested in the R.A.F. to go to the Royal Tournament and appreciate the other Arms of our Fighting Forces.

From a spectacular point of view, at any rate, in a covered arena, the R.A.F. cannot stage anything to approach a musical drive by the Gunners or a musical ride by a Cavalry Regiment.

Another thing too good to miss is the Display of Drill with Musket and Pike by the Brigade of Guards. The period



AWAITING THE START.—The Parnall Plover (Jupiter engine, 450 h.p.), flown by Sq. Ldr. Sir Quentin Brand, K.B.E., D.S.O., M.C., D.F.C.

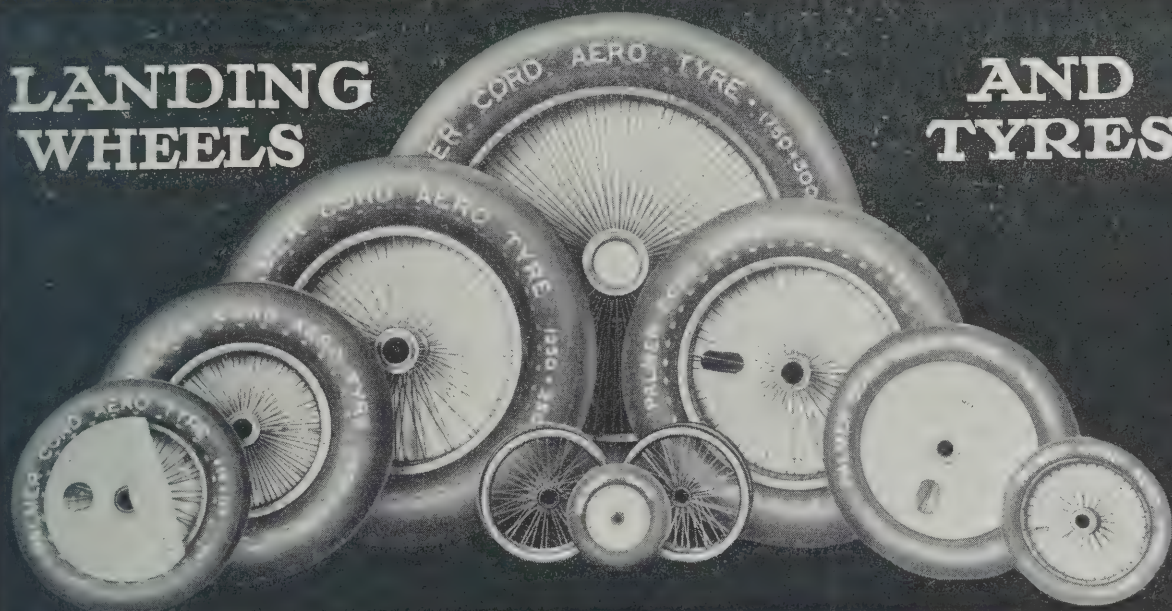


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|-----------|-----------|--------|-------|------------|-----------|-----------|--------|-------|------------|-----------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375×55 | 168 | 111.12 | 25.4 | Central | 700×100 | 112 | 150. | 38.09 | Central | 1000×150 | 210 | 185. | 60.32 | Central |
| 300×60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000×180 | 148 | 220. | 80. | Central |
| 450×60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650×125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575×60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900×230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750×125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650×65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100×220 | 134 | 220. | 66.67 | Central |
| 600×75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800×150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975×225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700×75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250×250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500×300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700×100 | 77 | 178. | 44.45 | 132/46 | 1000×150 | 167 | 185. | 55. | 125/60 | 1750×300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750×350 | 193 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 × 150 tyres. †Wheel No. 169 is fitted with Ball Bearings. Grease gun equipment is now a standard fitting on all wheels.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

of the display is about 1660 and the Guardsmen taking part are gorgeously arrayed in the costumes of the Restoration.

The Mounted Display by the N.C.O.'s Extended Course from the Equitation School, Weedon, is an interesting demonstration of what can be done by an intelligent combination of khaki and cats' meat. Most of the N.C.O.'s have neither a medal nor a moustache between them, but the equitation (as the programme insists on calling it) is magnificent.

In the Trick Riding and Fancy Tent-Pegging Display, the 17/21st Lancers out-Cossack the Cossacks about 100%.

The Physical Training Display by Students from the Army School of Physical Training is nearly as good as similar displays given from time to time in the past by recruits from the R.A.F. Depot, Uxbridge. After July 16, spectators can judge the relative qualities for themselves. As most people are violently prejudiced in favour of one Arm or the other nothing will be gained by the comparison, but everyone will be pleased.

The set piece consists of a Frontier Fight with British Forces (Sappers, Gunners and Guards and Tank Corps) on the one side and a well-armed Whadi tribe (R.N. and R.M.) on the other. The Sappers build some beautiful bridges across which the Tanks and other forces career with much smoke and few casualties, and the Whadis are utterly confounded and retire into the mountains. Several Whadi casualties drop from the heights (without parachutes) and are carried away on stretchers to be dropped down again, a most brutal form of warfare.

With their annual vindictive refusal to forget South Africa the Royal Navy demonstrate their 1901 methods of lifting a gun across a ditch. There is some sort of Inter-Port competition in connection with this event, and it is not consistent with THE AEROPLANE'S kind and generous attitude towards the Royal Navy to suggest that their competition should be carried out in decent privacy.—C. M. MCA.

R.A.F. SPORTS.

Inter-Service Athletics.

The Inter-Services Athletic Championships Meeting was held at Uxbridge on July 7. The Army won, with 27 points, the R.A.F. was second with 20 points, and the R.N. third with 12 points.

The R.A.F. won the Three-mile team race in 14 m. 52.4-5 secs., by six yards. L-AC. Goodall finished first. The R.A.F. also won the Long Jump (Plt. Off. Cannon 42 ft. 11 ins.), and the One-Mile Team Race (AC. Turner, Uxbridge, AC. Johnson, Lee-on-Solent, and L-AC. Hester, Uxbridge), by eight yards in 4 m. 30½ secs.

In the High Jump, Flg. Off. Nuttall jumped 6 ft. 0½ ins., but the R.A.F. teams' jumps only amounted to 11 ft. 4 ins., and the Army won this event by three inches.

In the 360 yards hurdles the R.A.F. finished second, but were disqualified.

The R.A.F. Lawn Tennis Championships.

The R.A.F. Lawn Tennis Championships were played at

Queen's Club on July 5, 6, 7, 8 and 9. The results were as follows:—

R.A.F. SINGLES CHAMPIONSHIP.

FIRST ROUND (concluded):—Wing Cdr. S. M. Murray beat Flt. Lt. S. M. Park (6-3, 6-1); Flt. Lt. C. E. Williamson-Jones beat Wing Cdr. J. H. Tyssen (6-1, 6-0); Plt. Off. F. G. Downing beat Flg. Off. H. W. Nicholl (6-1, 6-3); Flg. Off. H. W. R. Banting beat Sq. Ldr. N. F. D. Buckridge (6-2, 6-3, 6-0); Flg. Off. C. F. Roupell (holder) beat Flt. Lt. R. C. Preston (6-0, 6-3).

SECOND ROUND:—Flg. Off. E. J. Mockler beat Sq. Ldr. J. C. Russell (6-2, 6-3); Flg. Off. E. J. Ffoulkes-Jones beat Flg. Off. E. D. H. Davies (6-3, 7-9, 6-3); Murray beat Flt. Lt. H. C. Todd (6-2, 6-3); Williamson-Jones beat Wing Cdr. G. V. Fowler (6-1, 6-2); Plt. Off. Downing beat Flt. Lt. W. H. Poole (6-1, 6-4); Sq. Ldr. R. E. Saul beat Flt. Lt. G. R. Carr (6-0, 6-2); Wing Cdr. H. J. F. Hunter beat Flg. Off. W. F. Langdon (6-0, 6-1); Flt. Lt. C. A. Bouchier beat Flg. Off. A. E. Reynolds (6-4, 6-4); Flt. Lt. J. Duminy beat Sq. Ldr. F. C. M. Williams (3-6, 6-1, 6-4); Flt. Lt. L. V. Hirst beat Flg. Off. T. W. G. Cattell (6-4, 6-1); Flg. Off. H. W. R. Banting beat Flt. Lt. H. N. Hampton (6-2, 6-4); Flg. Off. C. F. Roupell (holder) beat Sq. Ldr. E. K. Manning (6-3, 6-2).

THIRD ROUND:—Flg. Off. E. J. Mockler beat Flt. Lt. F. N. Trinder (6-0, 6-2); Flg. Off. Banting beat Plt. Off. F. G. Downing (6-2, 7-5); Wing Cdr. H. J. F. Hunter beat Sq. Ldr. R. E. Saul (6-4, 7-3); Flt. Lt. H. J. Gilbert beat Flt. Lt. C. A. Bouchier (6-3, 6-2).

THIRD ROUND (concluded):—Flt. Lt. C. E. Williamson-Jones beat Flt. Lt. L. V. Hirst (6-2, 6-3); Flg. Off. C. F. Roupell (holder) beat Plt. Off. J. R. Addams (6-1, 6-2).

FOURTH ROUND (concluded):—Flg. Off. E. J. Mockler beat Flg. Off. E. J. Ffoulkes-Jones (6-3, 8-6); Flt. Lt. Williamson-Jones beat Flt. Lt. J. Duminy (6-1, 6-1); Flg. Off. Roupell beat Flg. Off. H. W. R. Banting (6-3, 6-0); Wing Cdr. H. J. F. Hunter beat Flt. Lt. H. J. Gilbert (6-3, 2-6, 6-1).

SEMI-FINAL ROUND:—Flg. Off. E. J. Mockler beat Flt. Lt. C. E. Williamson-Jones (1-6, 6-3, 6-2); Flg. Off. C. F. Roupell (holder) beat Wing Cdr. H. J. F. Hunter (7-5, 6-3).

FINAL ROUND:—Flg. Off. C. F. Roupell (holder) beat Flg. Off. E. J. Mockler (6-2, 6-2, 1-6, 7-5).

R.A.F. DOUBLES CHAMPIONSHIP.

FIRST ROUND (concluded):—Flg. Off. E. J. Ffoulkes-Jones and Flt. Lt. S. M. Park beat Flg. Off. A. E. Reynolds and Plt. Off. J. R. Adams (6-2, 6-4).

SECOND ROUND:—Flt. Lt. J. Duminy and Flg. Off. C. F. Roupell beat Sq. Ldr. A. E. Panter and Flt. Lt. G. R. Carr (6-0, 6-2); Flg. Off. H. W. Nicholl and Flt. Lt. L. V. Hirst beat Plt. Off. F. G. Downing and Plt. Off. R. E. Hall (5-7, 11-9, 6-4); Sq. Ldr. N. F. D. Buckridge and Flt. Lt. H. J. Gilbert beat Wing Cdr. E. M. Murray and Flt. Lt. W. H. Poole (6-3, 6-2); Wing Cdr. G. V. Fowler and Flt. Lt. F. N. Trinder beat Flt. Lt. C. A. Bouchier and Flg. Off. A. H. C. A. Rawson (8-7, ret.); Wing Cdr. H. J. F. Hunter and Sq. Ldr. R. E. Saul (holders) beat Sq. Ldr. F. G. M. Williams and Flt. Lt. H. N. Hampton (6-3, 6-2).

THIRD ROUND:—Flt. Lt. J. Duminy and Flg. Off. C. F. Roupell beat Sq. Ldr. J. C. Russell and Flt. Lt. H. C. Todd (6-0, 6-2); Sq. Ldr. V. S. Erskine-Lindop and Flg. Off. E. J. Mockler beat Flg. Off. H. W. Nicholl and Flt. Lt. L. V. Hirst (6-0, 6-3); Flt. Lt. C. E. Williamson-Jones and Flg. Off. E. D. H. Davies beat Sq. Ldr. N. F. D. Buckridge and Flt. Lt. H. J. Gilbert (3-6, 6-3, 6-1); Wing Cdr. H. J. F. Hunter and Sq. Ldr. R. E. Saul (holders) beat Wing Cdr. G. V. Fowler and Flt. Lt. F. N. Trinder (6-3, 6-3).

SEMI-FINAL ROUND:—Wing Cdr. H. J. F. Hunter and Sq. Ldr. R. E. Saul beat Flt. Lt. C. E. Williamson-Jones and Flg. Off. E. D. H. Davies (3-6, 7-5, 6-1).



AN AMERICAN NAVY FIGHTER.—The Curtiss Hawk (F.6-c) (430 h.p. Curtiss D.12 engine). This is the Curtiss P1, fitted with floats as a Naval Pursuit Ship and has been ordered in quantities by the U.S. Navy. Its speed is approximately 145 m.p.h.



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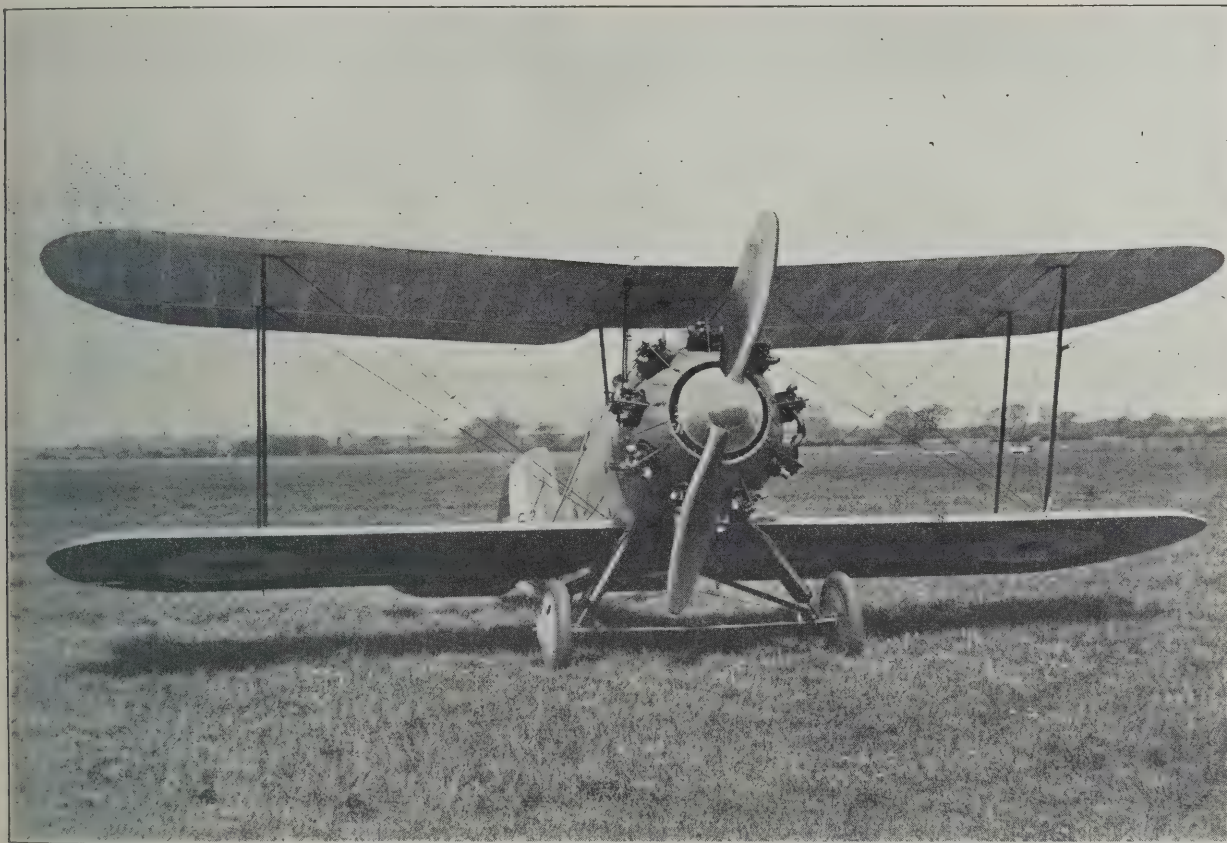
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SEMI-FINAL ROUND (concluded):—Flt. Lt. J. Duminy and Flg. Off. C. F. Roupell beat Sq. Ldr. V. S. Erskine-Lindop and Flg. Off. E. J. Mockler (8-6, 6-4).

FINAL ROUND:—Wing Cdr. H. J. F. Hunter and Wing Cdr. R. G. Saul (holders) beat Flt. Lt. I. Duminy and Flg. Off. C. F. Roupell (6-4, 6-3, 4-6, 6-3).

R.A.F. VETERANS' CUP

FINAL ROUND:—Wing Cdr. G. V. Fowler beat Wing Cdr. G. St. P. de Dombasle (6-0, 6-4).

R.A.F. PLATE SINGLES.

SEMI-FINAL ROUND:—Flg. Off. E. D. H. Davies beat Wing Cdr. G. N. Fowler (6-2, 6-3); Flt. Lt. W. H. Poole beat Sq. Ldr. A. E. Panter (1-0, 8-6, 6-2).

FINAL ROUND:—Flg. Off. E. D. H. Davies beat Flt. Lt. W. H. Poole (6-3, 6-1).

CO-OPERATION OF THE FIGHTING SERVICES.

A series of articles has appeared recently in *The Times* entitled "Co-operation in the Services" and dealing with the combined operations between the three Services which have been taking place under Sir Alexander Godley, on the South Coast. The author of these articles, a Military Correspondent of *The Times*, describes the plan of the operations as follows:—

Being unable to make headway in the main battle against the Wessex Army north of Sidmouth, the Mercian commander decides to combine a frontal attack with an attack in rear from near Exeter. This is mobility with a vengeance. How is it to be achieved in practice? Very much in the same way as an English force got behind the Scots at Flodden. By using sea-transport to facilitate a convergent attack, partly from the rear.

Sir Alexander Godley's plan, in combination with the Navy and Air Force, is to land, somewhere near Dartmouth, a "mechanical force," including, besides its headquarters, two armoured car companies, one battalion of little tanks ("tankettes"), one section of a field company R.E.; and a signal company, all mechanised. This means, in all, five armoured motor-cars, 18 armoured cars, 177 "tankettes," and 20 (30-cwt.) lorries, as "armoured vans." It will be noted that no transport is provided for sick and wounded. These must either travel in the vans or be dropped with the inhabitants.

By such means a rapidly moving force with a land radius of 200 miles, without fuelling, is devised. To complete the military force to be landed Mercia will use a brigade of infantry, each battalion having eight "tankettes" to carry the Vickers guns, two batteries of pack guns, a signal section, a field company R.E., and a field ambulance.

The speed essential to the successful working of this plan depends upon co-operation, and, after studying the scheme separately, responsible officers of the three Services conferred together to decide the governing principles of the operations.

Upon the Navy depends the conveying of the troopships and their protection from submarines and aircraft. The second article of the series states:—

The commander of the Mercian sea forces (Rear-Admiral V. H. S. Haggard) has the following armament at his disposal (on paper):—A flagship of the *Hawkins* class; two destroyer flotillas, one of them being specially detailed for anti-submarine work; eight mine-sweepers; 12 trawlers; 12 motor-launches; and the *Mercury*, an aircraft carrier. Six "H" class submarines also take part. The naval task is twofold: first to guard the convoy during its passage, and afterwards, when at anchor, disembarking troops; then to put the troops and their impedimenta on shore with the utmost speed.

The author lays stress on the fact that in order to apply the lessons of these operations new experimental mechanical vehicles and arrangements for landing them are urgently needed. He thinks that special craft could be designed to land the mechanical vehicles in less than half the time taken at present.

With regard to aircraft the article states:—

Then we come to the all-important question of the air. The exercise brought out clearly that co-operation has its limitations. A Fleet Air Arm, with all the goodwill in the world, cannot co-

operate with both the other Services simultaneously. Articles on the "Navy of To-day," which were published in *The Times* in the early spring, showed clearly that an aircraft carrier must steam into the wind for the aircraft to leave her decks; also that there must be limits to the rate at which aircraft can alight upon and leave her. It is highly desirable, if not essential, when co-operation with both Services is hoped for, to establish a landing ground on shore.

The article goes on to discuss the problems of leaving the beach. Beach labour would be essential as the fighting troops would have their mission inland and only in exceptional conditions could fighting ships spare their crews.

Enemy opposition to the landing might be prevented to a certain extent by the use of smoke screens from the air.

The author concludes the articles with a tribute to the hearty co-operation of the three Fighting Services and the Board of Trade, and expresses the hope that in next year's Estimates sufficient funds will be allotted to provide experimental material for landing mechanical vehicles.

MOTHS FOR IRELAND.

On July 12 four D.H. Moths (27-60 h.p. A.D.C. Cirrus engines) ordered by the Irish Free State Air Force, left Stag Lane aerodrome to fly to Dublin for delivery. The four machines were piloted by Col. the Master of Sempill, Major H. Hemming, Capt. F. T. Courtney and Capt. H. Broad.

The D.H. Moth has been adopted by the Irish Free State Air Force as a training machine, and Col Sempill, who was in charge of the flight of four machines, is acting in an advisory capacity to the Free State Air Force.

The formation arrived at Dublin at 16.00 hours.

AIR AFFAIRS IN PARLIAMENT.

THE AUTO-GIRO.

In the House of Commons on July 7, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that by arrangement with Senor de la Cierva, a demonstration of the Auto-Giro had been given at Farnborough last October. The Air Ministry had subsequently ordered a number of these aircraft from British firms and one of these had flown for the first time on June 19. The Air Ministry proposed to carry out an extended series of trials during the present summer in order to enable them to decide as to the probable utility of this type of aircraft for Service and civil flying. He added that four of these aeroplanes had been ordered.

THE FLYING CLUBS.

In the House of Commons on July 7, in reply to a question by MR. T. WILLIAMS, the SECRETARY OF STATE FOR AIR said that arrangements for a term of two years had been made with six light aeroplane clubs, whose constitution had been approved by the Air Ministry, providing for the grant to each of a sum not exceeding £2,000 for the purchase of initial equipment, a grant not exceeding £1,000 a year of the agreement towards maintenance of the equipment and a replacement grant, if required, during the first year of half the cost of replacement within a maximum of £1,000. A grant of £10, of which half might be given to the club member, was made to the club for each member who, having been trained on club aircraft, obtained a pilot's certificate.

THE LIMITATION OF ARMAMENTS.

The first part of the session of the Naval, Military and Air Sub-Committee of the preparatory Commission for the International Disarmament Conference at Geneva came to an end on July 6.

With regard to Air Armaments, the Sub-Committee proposed under certain conditions to compare the total number of personnel together with the number of pilots included in these effectives and to compare material, which is divided into two classes—namely, dirigibles where volume and horse-power should be the criteria; and secondly, aeroplanes, where the total horse-power and the number of machines with reference to total horse-power is suggested as a criterion.

The Sub-Committee further affirmed the superior importance of material over personnel as a criterion.



A DUTCH PASSENGER CRAFT.—The Koolhoven F.K.33 (three Puma engines, 230 h.p. each).

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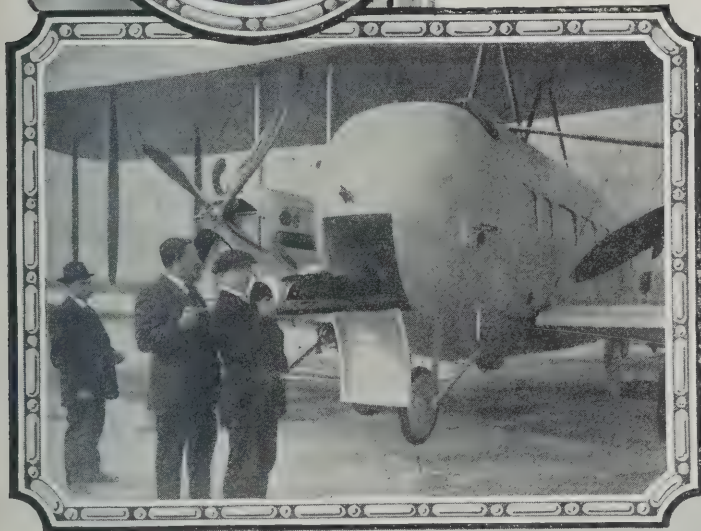
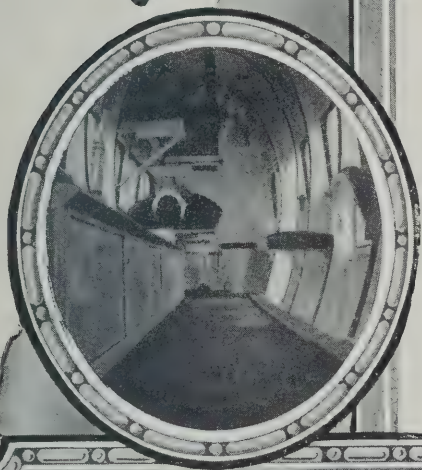
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The machine illustrated is the Vickers "VIMY" Ambulance, as supplied to the Royal Air Force for operation in the East, where this type has proved of great value for the rapid evacuation of sick and wounded.

Fitted with twin 450 H.P. Napier "Lion" engines the "VIMY" has accommodation for a crew of 2 and Doctor, Nurse and 4 stretcher cases or 8 "sitting up" cases.

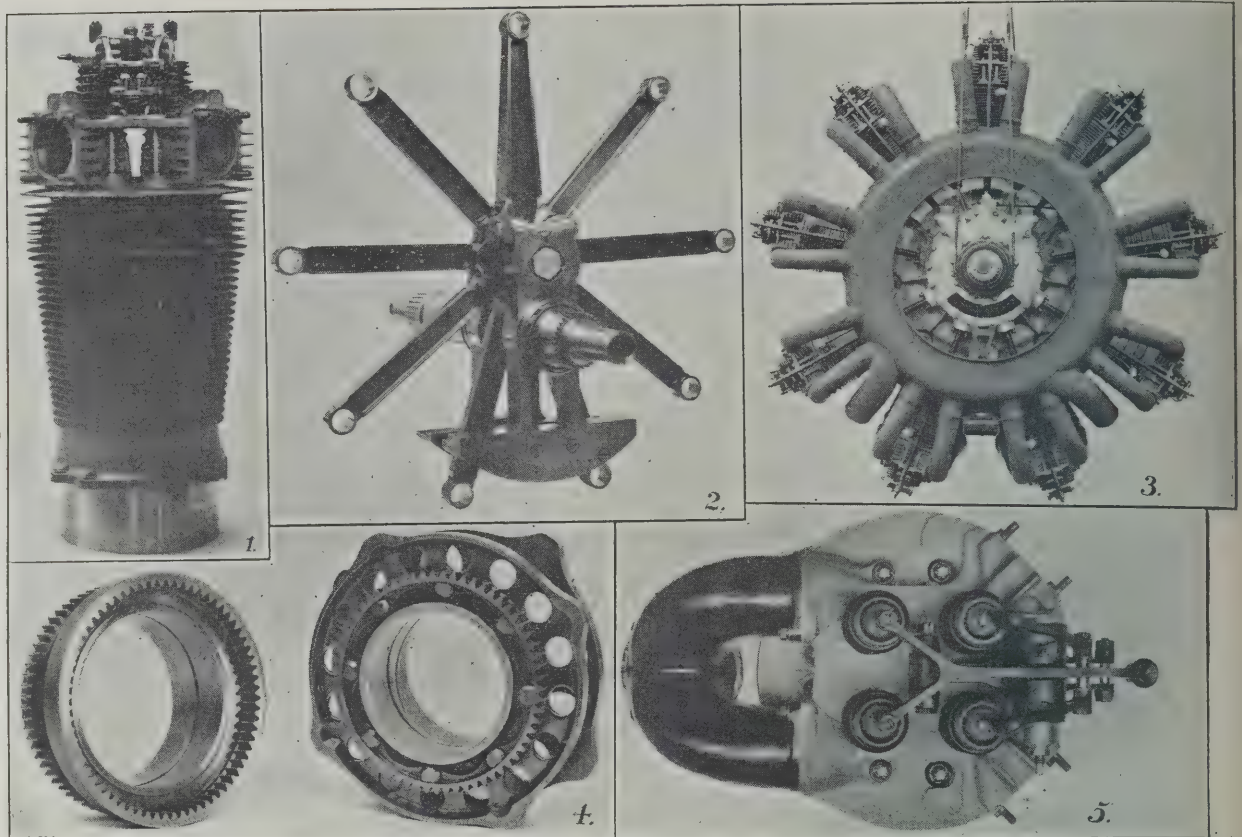
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THE BRISTOL JUPITER SERIES VI.



THE JUPITER VI.—(1) Cylinder complete. Note air passage between valves. (2) Crankshaft and connecting-rod assembly, showing the joint in crankshaft. (3) Front view of complete engine with exhaust manifold. (4) Cam rings and cam gear. (5) Plan view of cylinder head showing valve gear lay-out.

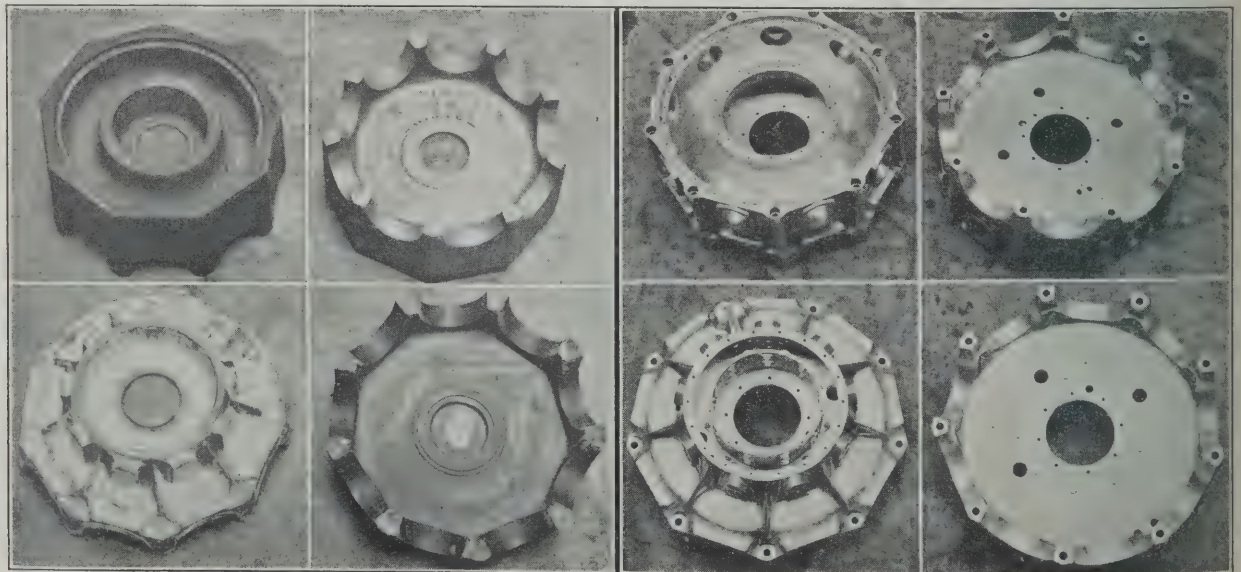
The veil of secrecy surrounding the Jupiter VI having been drawn aside on July 1, it is now possible to describe the essential features of this remarkably successful engine. Although the Jupiter VI is very definitely of the same general design as the earlier engines of the same name, and is interchangeable with them so far as mounting, etc., it is very appreciably different from the earlier engines in many vital details.

It is already generally known that the Jupiter VI develops some 50 more h.p., weighs about 80 lbs. less, and is $4\frac{1}{2}$ inches less in diameter than the type which preceded it. And it has already given convincing proof that in reliability it more than maintains the high qualities of its predecessors.

What is perhaps the most important novelty in the series, VI Jupiter, is the use of a two-piece instead of a solid crankshaft. This shaft is made from two hardened and tempered

60-ton nickel-chrome steel stampings. The front end with the airscrew boss seating, one crank web, and the crank pin are in one piece, and the second crank web and the tail shaft—or maneton—in another. The crank pin spigots with the web on the maneton, where it is registered by a stout taper key formed in the eye of the maneton. This eye is split, and is nipped on the pin by a stout bolt and nut. The joint thus produced has proved exceedingly satisfactory and no signs of spring or working have been found under the most severe conditions.

This jointed crankshaft permits the use of a solid big end and big end bush, and consequently the rigidity of the big end bearing is improved, and a very long life for this is secured, despite the very high loading to which it is subjected. In addition, it is possible to keep the wrist pin centres for the auxiliary connecting rods closer on than



THE JUPITER VI.—The four pictures on the left show the duralumin forgings for the Jupiter VI crankcase in the rough. The four to the right are the same forgings in the finished state. The four pictures at the top are the rear half of the case, the four at the bottom are the front half.



KING'S CUP

Fastest time made on
SHELL

Squadron-Leader H. W. J. Jones, M.C., flying a Martinsyde D.C.1 entered by Lt.-Col. M. O. Darby, O.B.E., completed the course in the fastest time—at an average speed of 151.92 m.p.h.—using Shell Aviation Spirit.

**This speed constitutes a
record for the King's Cup.**

Flight-Lieut. E. R. C. Scholefield, A.F.C., D.C.M., flying a Vickers Vixen III, entered by Mr. Douglas Vickers, made the second fastest time—also using Shell Aviation Spirit.

Shell Aviation Spirit contains exactly the same well-balanced power-elements as Shell Petrol—but blended in slightly different proportions to suit the requirements of aero engines on the one hand and of car and motor-cycle engines on the other.

SHELL

Aviation Spirit



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would be possible with a split big end. The counter-balance weights on the crankshaft have been pushed out to a larger effective radius and consequently have been reduced in weight.

Another important feature of the Jupiter VI is that the crankcase is made from duralumin forgings instead of aluminium castings. The stampings are machined all over and although of the same overall dimensions and of the same leading sections throughout as the original crankcases, the weight has been reduced by about 28 lbs. and at the same time, owing to the superior quality of the material, the forged cases are very much stronger than the original type.

The cylinders, of the same general construction as in the earlier Jupiters, are sunk deeper into the crankcase. The radiator-fins are of smaller diameter, and eccentric to the bore, so that there is less depth of fin in the front of the cylinder. The spark plugs are now arranged in the plane of rotation of the engine instead of being on a diagonal diameter.

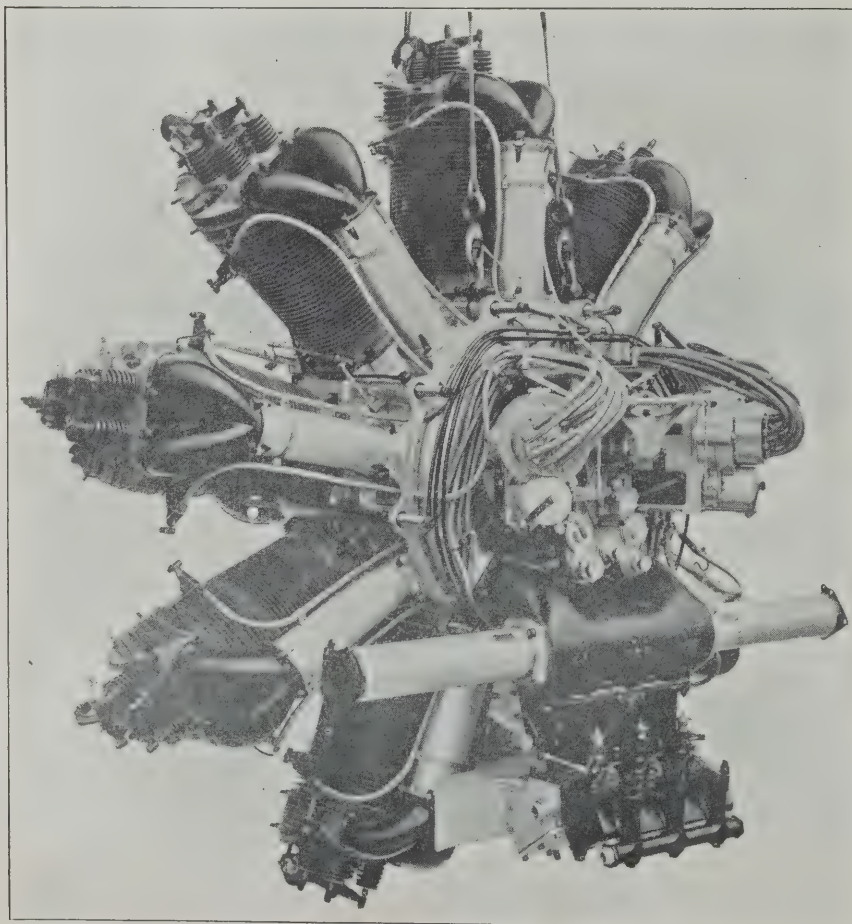
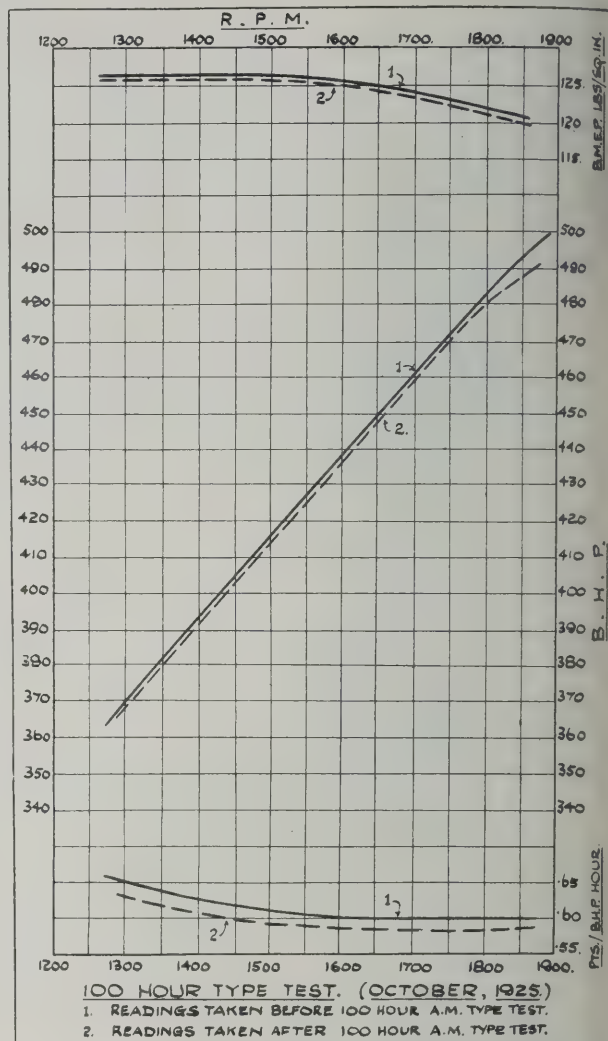
The aluminium cylinder head has been slightly reduced in thickness, and gives a clear air passage fore and aft between the valve ports. Iron packing pieces are fitted over the studs holding the heads down, between the top plate and the base of the head, thus preventing distortion due to differential expansion of the aluminium head and the steel studs. The valve rocker gear has also been slightly reduced in overall height.

These are the main items which account for the reduction in overall diameter and weight, but there are numerous other details which contribute to the saving of weight without loss of strength and robustness.

The crankshaft is carried on two main roller bearings close up to each crank web, supported from the crankcase wall. In earlier Jupiters the outer races of these bearings was carried in a flanged housing bolted to the crankcase. Now the races are formed in one piece with the flange. At the front end of the shaft a spherical Skefco dual-purpose roller bearing is fitted, and a small white metal steady bearing supports the tail shaft.

The solid big end is fitted with a hardened steel sleeve, which runs on a floating bush on the crankshaft. This bush is of phosphor bronze, and runs direct on the bush in the big end, and is lined with centrifugally cast white metal to run on the crankpin. Auxiliary and master rods of nickel chrome steel are of channel section, bronze bushed, running on floating steel pins in the pistons.

The pistons, which are of the slipper type, have very ample crown section to conduct heat to the walls, and are fitted with two gas rings and a scraper ring which is of channel section.



The cam gear consists of two four-lobed cam rings concentric with the crankshaft, and driven therefrom by an eccentric epicyclic gear at one-eighth engine speed in the opposite direction to the crank. This gear differs from the original gear mainly in that each of the cam rings is now directly supported by lightened discs instead of being carried by an overhung flange from a single disc.

The overhead rocker gear is of the standard Bristol temperature compensated type which maintains constant valve clearance independently of engine temperature, but, as already mentioned, has been arranged to project less from the cylinder head.

Tappet rod guides are very similar in form to those of the previous Jupiter, but are made from duralumin instead of phosphor bronze. Incidentally, a duralumin bearing bush is used on the cam gear and there are other duralumin bearings on the auxiliaries, all of which appear to stand up excellently to their work.

The auxiliary gear at the back of the engine has been extensively rearranged. The Bristol spiral induction system remains unaltered, but a new Bristol triplex carburettor replaces the three carburettors previously used. This car-

THE JUPITER VI.—View showing all auxiliary gear. Note the new Triplex carburettor with combined warm-air intake below and exhaust heating connections above. The oil jackets are just above the exhaust heater, and at the top, just over the magneto leads, is the distributor for the gas starter.

King's Cup Air Race

1st Mr. H. S. BROAD
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Entrant: Sir CHARLES C. WAKEFIELD, Bart.

2nd Mr. E. R. C. SCHOLEFIELD
Vickers "Vixen," 450 h.p. Napier "Lion"
Entrant: Mr. DOUGLAS VICKERS.

3rd Sq. Ldr. H. W. G. JONES
Martinsyde A.D.C.1., 385 h.p. Mark IIIA
Armstrong-Siddeley "Jaguar" Engine.
Entrant: Lt.-Col. M. O. DARBY.

and all finishers

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burette packs up $5\frac{1}{2}$ inches closer to the engine centre line than in the earlier type, and needs only a single petrol connection, which can be taken from either side of the engine. The air intake is arranged to face the engine and air flows through a heater box which embraces the back of the two lowest cylinders.

The oil pumps are considerably modified in detail design and can be very easily dismantled and assembled. The oil filters can be removed and cleaned without breaking the oil supply connection as was necessary in the earlier types. Magnetos remain in the same position and the general scheme of auxiliary gear drives is similar to that of the Jupiter IV. Enclosed cams for the Constantinesco gun gear are fitted on Service engines.

Three standard types of the Jupiter VI are now manufactured, two for military and one for commercial service. One is a high compression (6.3 to 1) engine with the Bristol variable timing gear. Using standard service fuel (25 per cent. benzol), this engine develops the ground output up to 5,000 feet. The fixed timing service engine has a compression ratio of 5.3 to 1, and the commercial engine a compression ratio of 5 to 1. This latter type can be relied upon to give a very long life between overhauls and will run satisfac-

torily over a wide range of conditions on any reasonable fuel.

SPECIFICATION.

| | | |
|-----------------------|-------|---|
| Number of cylinders | ..... | 9 |
| Bore | ..... | 5.75 ins. (146 m/m.) |
| Stroke | ..... | 7.5 ins. (190 m/m.) |
| Cylinder capacity | ..... | 1,753 cub. ins. (28.7 litres) |
| Overall diameter | ..... | 53 ins. (1.32 m.) |
| Weight complete | ..... | 730 lbs. (332 kg.) |
| Compression ratio | ..... | 6.3 (variable timing) 5.3 (fixed timing) 5.0 (fixed timing) |
| Normal output | ..... | 425 b.h.p., 1,700 r.p.m. (5,000 ft. 1,540 m.) 450 h.p., 1,700 r.p.m. (sea level) 420 h.p., 1,700 r.p.m. (sea level) |
| Max. output at ground | ..... | 515 b.h.p., 1,870 r.p.m. (with extra benzol) 485 b.h.p., 1,870 r.p.m. 460 b.h.p., 1,870 r.p.m. |
| Max. fuel consumption | ..... | 29 galls (130 litres) per hour |
| Max. oil consumption | ..... | 1.25 galls. (5.7 litres) per hour |

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending July 11.

The total flying time was 53 hrs. 20 mins.

The following members had flying instruction:—R. V. Banks, Miss O'Brien, C. E. R. Brocklebank, M.P., F. W. R. Martino, L. J. C. Mitchell, J. H. Saffery, G. W. Hall, K. V. Wright, L. Martin, G. M. Randall, H. R. Thomas, T. W. Eady, A. J. Richardson, H. R. Presland, G. W. Hall, C. L. Harrison, P. O. A. Davison, B. B. Tucker, E. K. Blyth, H. G. Harwood, R. C. Presland, G. N. Howe, T. C. Elford, T. W. Heath, A. Southgate, E. L. O. Baddeley, J. A. Simson, E. A. Lingard.

The following members made solo flights:—E. L. O. Baddeley, W. Hay, A. H. M. Lees, Major K. M. Beaumont, G. Walcousins, Capt. W. Roche Kelly, S. O. Bradshaw, N. Jones, R. C. Presland, N. J. Hulbert, A. R. Ogston, L. J. C. Mitchell, G. H. Craig, E. S. Brough, A. Lees, E. E. Stammers.

Joy-rides were given to the following associates:—L. G. Valpy, Miss MacCallum, B. Waugh.

1,000 Hours' Flying.—The London Aeroplane Club during the past week completed its 1,000 hours' flying. The London Club is the first to attain this figure.

The Duke of Sutherland's Presentation Moth.—On July 10 at Hendon the Duke of Sutherland, after making a flight in the D.H. Moth G-EBNY, piloted by Mr. E. I. F. St. Barbe, formally handed it over to the London Aeroplane Club. Lieut.-Col. Sir Francis K. McClean, Chairman of the Committee of the London Aeroplane Club, expressed the warmest thanks of the members to the Duke of Sutherland for his generous gift.

The Members' Pavilion.—The Club has acquired a small pavilion which has been erected close to the Club hangar. The proceeds of the Club Dance held in January last, amounting to about £30, will be devoted to furnishing the pavilion for the comfort of the members and Mrs. Woods Humphery has kindly undertaken to supervise the work.

The Lancashire Aero Club.

Report for week ending July 11.

Machine in use G-EBMQ. The weather has been bad.

Mr. Stack gave instruction to:—Messrs. Fallon 50 mins., Rodman 45 mins., Crossthwaite 40 mins., Leigh 35 mins., Agar 30 mins., Anderson 30 mins., Hardy 25 mins., Gerrard 25 mins., Crabtree 20 mins., Good-year 10 mins., Scott 10 mins., Collinson 10 mins., Leeming 5 mins. Total 5 hrs. 35 mins.

Mr. Cantrill gave instruction to:—Messrs. Fray 25 mins., Jenkinson 20 mins., Gattrell 20 mins. Total 1 hr. 5 mins.

Mr. Scholes gave instruction to:—Messrs. Crossthwaite 1 hr., Davison 30 mins., Tummers 30 mins., Foxcroft 20 mins., Brown 20 mins., Hardy 20 mins., Newton 20 mins., Fallon 20 mins., Crabtree 20 mins., Leeming 20 mins., Lowe 15 mins., Burt 15 mins. Total 4 hrs. 50 mins.

Tests occupied 55 mins. Solo flights by Messrs. Leeming 1 hr. 30 mins., Goodfellow 30 mins., Lacey 25 mins., Crabtree 5 mins. Total solo 2 hrs. 30 mins.

Total time flown 14 hrs. 55 mins.

The aerodrome will be closed on Friday, July 23, at 4.0 p.m. until Sunday, July 26, at 2.0 p.m., as four of the Club's machines will be away at the Yorkshire Aero Club's Flying Display. A party of members are going to Sherburn for this occasion and it is hoped that all who can will assemble at Sherburn Aerodrome, near Leeds, on the morning of July 24.

The Newcastle-upon-Tyne Aero Club.

Report for week ending July 11.

The Club is still without an Instructor, Mr. J. D. Parkinson not being due to arrive until July 12, but the pilot members have kept things moving as much as possible.

Only one machine is on service, otherwise Sunday, the 11th, should have been a big day. However, the second engine has been returned after overhaul and the machine will be on service early in the coming week.

Following are particulars of flying carried out:—

Total time, 5 hrs.

Mr. R. N. Thompson carried Mr. A. D. Bruce as passenger on one flight.

Mr. Baxter Ellis flew with Mr. A. D. Bruce, Mr. J. M. Davidson (two flights), Mrs. Davidson, Dr. Dixon, and Mr. G. H. Waugh.

Mr. N. S. Todd carried the following passengers:—Mr. J. Bell (taking photographs), Mr. Howard, Mr. and Mrs. A. H. Bell.

On Sunday, the 11th, Air Commodore J. G. Weir and Mrs. Weir visited the aerodrome for tea and petrol, in the course of a journey from London to Glasgow on the D.H. 51a. There were a number of members on the aerodrome at the time and all were agreeably surprised to see the smart machine arrive, though it does make the Moths look rather small and ordinary.

It was a beautiful day and the 51 looked very nice in the air. Air Commodore and Mrs. Weir submitted good naturedly to being photographed before taking off, and later kindly manoeuvred the machine so that it could be photographed from a Moth by means of an aerial camera, in the air.

Since the large hangar has been made waterproof (or nearly so) Badminton has become a popular pastime and it appears that it may shortly be difficult to select the team to meet that which challenged the Club some time ago. The game is being taken as seriously as flying has been and the challengers will require to get in some practice. Needless to say Mr. R. N. Thompson is the prime mover in the game.

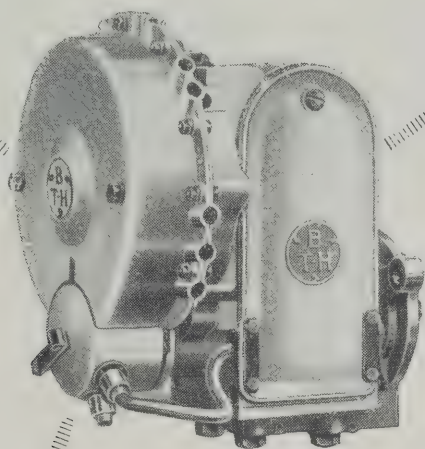
The Yorkshire Aeroplane Club.

Report for week ending July 4. (Delayed in post.)

We are now all putting our backs into the job and are getting to work in earnest. We realise that to make a success of the Club



THE LAST MAN AWAY.—Mr. F. L. Barnard starting from Scratch on the Bristol Badminton (Jupiter engine, 450 h.p. in the King's Cup Race on Saturday.



1st, 2nd, 3rd places

in the

King's Cup Race

have been gained by
machines fitted with

B T H Magnetos

All machines that completed
the course were equipped with

B T H Magnetos



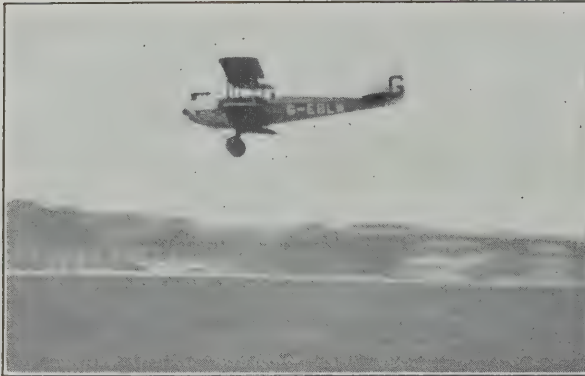
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BIRMINGHAM'S SPORTING EFFORT.—Capt. McDonough, of the Midland Aero Club, piloting the Club's Moth, entered by Major Gilbert Dennison, in the King's Cup Race.

every man must put in a lot of jolly hard work. It is for this reason we have been compelled to accept the resignation of Professor Brodetsky, our Chairman, who should have held office until next September, but intimated this week that he offered his resignation, as he was unable to spare the time.

It is with real regret that we have accepted this, as he has always been a genuine help to the Club and has put in a great deal of hard work on our behalf. We take this opportunity of placing on record our appreciation of his services. Fortunately we only lose him as a Chairman and we shall continue to have his help in any other way we desire.

We have unanimously elected as his successor Mr. W. L. Oldroyd, a very keen supporter of the Club, and one who can spare us a great deal of his time.

Aerodrome Activities.—The following had dual instruction during the week:—Messrs. J. F. Barnes 30 mins., W. L. Oldroyd 30 mins., Mann 60 mins., Elani 60 mins., Yapp 30 mins., McCalman 30 mins., Fowler 140 mins., Carter 25 mins., Lax 85 mins., Wood 45 mins., Swift 10 mins.

The following did solo flights:—Messrs. McCalman 15 mins., Wood 15 mins., and Fowler, who went up for his first solo on July 2 and made a jolly good effort.

Owing to the absence of Capt. West in London for medical board, Mr. Carter, a "B" licence man, kindly attended the aerodrome on July 4 to give instruction to any pupils who wanted it. He gave Mr. Swift 10 mins. dual and also took up Mr. Ruddick, a prospective member, for a trial flight.

Total dual 12 hrs. 5 mins. Total solo 40 mins. Owing to various people playing football on the tarmac outside the sheds and leaving portions of their boot-gear (chiefly hob-nails) about there are several punctures to report this week; our engineer reports there are about 20 punctures in each tube! As we do not at present possess many spares, severe action will probably be taken.

Our Moth, which we sent for repair some time ago, is expected in about three weeks—in time, we hope, for our Air Pageant—and by then we shall have a lot more pupils ready for solo.

We are preparing for our Air Pageant on July 24 and have had many valuable prizes promised, and we wish to impress upon our friends the necessity of keeping their machines intact. If they fly over to Sherburn any time before that date a really warm Yorkshire welcome is assured. We beg to remind prospective competitors and others that the Leeds Tercentenary Festivities are on at the time, so that there are plenty of things to be done outside the Pageant, and we can guarantee everyone a jolly good time.—R. W. K.

Report for week ending July 10.
The following members had dual instruction during the week:—Messrs. Lax, McCalman, Barnes, Swift, Harvey, Norway.

The last two pupils are members of the Airship Guarantee Company stationed at Howden. Mr. Norway was lately at de Havillands and has done 30 mins.' solo already.

Total flying 8 hrs. 48 mins. Total dual 4 hrs 30 mins. Joy-rides and tests 2 hrs. 18 mins. Total solo 2 hrs.

Mr. Henry Leatham, a new member of the Club, had his first flight on Sunday and if enthusiasm counts for anything should have his flying certificate in about three weeks.

Mr. Lax and Mr. McCalman are now ready for their Aero Club certificates and may take these next week.

Capt. West tried out Mr. Smith's Wren, which the latter bought some time ago, but only did a few straights, owing to the numerous haycocks which are now happily being quickly removed.

Our Air Pageant promises to be a great success. Entries having been received all round, and the way other Flying Clubs are helping us by entries is really very sportsmanlike. We want as many pilots and machines as possible and accommodation will be found for everyone.—R. W. K.

The Southern Aero Club.

Report for week ending July 4. (Delayed in post.)

The total flying for the week only reached 8 hrs. 10 mins., the whole of which was confined to G-EALL, owing to G-EATU being out of commission for change of engine and general inspection.

Further, our members attended the Hendon Pageant in force, flying on Saturday being practically nil.

The following members had dual instruction:—Messrs. Orford, Poole, Naunton and Boulding.

Solo flights were made by Messrs. Parker, Richardson, and Bambridge. **Report for week ending July 11.**

Total flying time 4 hrs. 27 mins., all on G-EATU.

The attendance of members at the aerodrome has been fairly regular, but owing to slight rain and ground mists little flying has been possible.

The following members had instruction:—Messrs. Orford, Naunton, Boulding, and Baxter. Mr. Parker made a short solo flight.

A PROJECTED ATLANTIC FLIGHT.

Capitaine Fonck, the premier French "ace," is preparing to make an attempt to fly from New York to Paris in order to win the Raymond Orteig Prize of \$25,000, which was put up some years ago for a direct flight between these two cities. Capt. Fonck is at present in New York supervising the construction of the machine on which he will make the attempt.

The machine to be used is a Sikorsky sesquiplan equipped with three Gnome-Rhône Jupiter engines. The composition of the machine and its crew is essentially international—a machine built in America, designed by a Russian, fitted with British engines built in France under license, a French pilot and two American assistants.

Sikorsky built the first four-engined machine which ever flew. Since the end of the War 1914-18 he has been in the States, but has produced nothing worthy of note. This latest effort seems exceedingly ambitious, and one doubts whether any machine can, as yet, be built to carry enough petrol for the non-stop flight of something like 3,500 miles from New York to Paris. But, at any rate, the Jupiter engines may fairly safely be trusted to stay the distance.

AN UNHAPPY RETURN.

On July 10 Capt. Arrachard and his brother, Adjutant Arrachard, who recently flew from Paris to Basra non-stop on a Potez XXVIII biplane (600 h.p. Renault engine) attempted to fly back to Paris. They were compelled to land at Harta, 60 miles south of Budapest, owing to magneto trouble. The machine ran into a ditch and was badly damaged.

NEW ENGINES FOR THE HAMPSTEAD.

One understands that the Handley Page Hampstead which up to now has had three Armstrong Jaguar engines is going to Bristol this week to be fitted with three Bristol Jupiter VI engines. It will be interesting to see how performance and reliability of the machine compare with its former engines.

The object of the change is in order to get some data on the service running of the Jupiter.

SHORT BROTHERS' SPORTS.

On Saturday, July 10, the employees of Short Bros., of Rochester, held their 9th annual Athletic Sports Meeting, on the Chatham United Services Ground. The meeting attracted some 1,500 spectators, and the weather conditions were very favourable. The sports were well patronised as regards entries both by the employees and by visiting athletes in the good programme of open events. Some fast times were recorded, and a burlesque side was provided by a party of clowns.

A special attraction was the North Kent Senior Relay Championship, which provided a close finish between the Depot Batt., R.E.s, and the City of Rochester Athletic Club, the former winning by inches only, with Dartford Harriers third.

The "Victor Ludorum" Medal (presented by Chief Constable Arnold of the Rochester City Force) was won by J. T. Pateman for a series of firsts and seconds in various events (second consecutive year of winning this award).

At the close of a very interesting meeting prizes to the value of £100 were presented to the various winners by Mrs. A. E. Short.—A. C.

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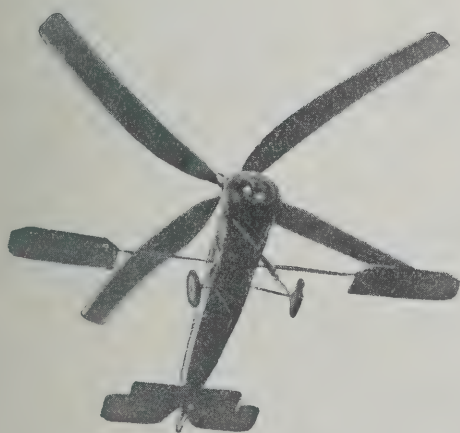
"CONSUTA" is eminently suitable for all aircraft.
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The "NEWG," which has just won the Duke of
York's Trophy and now holds the World's Record
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.**The London Terminal Aerodrome.**

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 22; Tuesday, 23; Wednesday, 27; Thursday, 21; Friday, 27; Saturday, 32; Sunday, 9.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 75, passengers 649, freight 17 tons.

AIR UNION:

Paris—London: Machines 46, passengers 277, freight 18 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 24, passengers 118, freight 2.8 tons.

SABENA:

Brussels—London: Machines 10, passengers 50.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 0, passengers 0.

SPECIAL:

Machines 6, passengers 7.

Total number of trips by British Machines, 81, carrying 586 passengers. Foreign Machines, 80, carrying 440 passengers.

Comparative Figures:

Week ending July 11:

Machines, 161; Passengers, 1,051; Crews, 207; Total personnel, 1,258.

Corresponding week, 1925:

Machines, 172; Passengers, 851; Crews, 222; Total personnel, 1,073.

Corresponding week, 1924:

Machines, 173; Passengers, 741; Crews, 214; Total personnel, 955.

Corresponding week, 1923:

Machines, 111; Passengers, 542; Crews, 185; Total personnel, 727.

Corresponding week, 1922:

Machines, 115; Passengers, 326; Crews, 235; Total personnel, 561.

Corresponding week, 1921:

Machines, 115; Passengers, 426; Crews, 143; Total personnel, 569.

Corresponding week, 1920:

Machines, 108; Passengers, 233; Crews, 126; Total personnel, 359.

Croydon Notes.

On July 5, Mr. Dudley Travers returned to Croydon from Berck on his D.H.9. with two passengers.

On July 9 Lieut.-Col. G. L. P. Henderson left Croydon at 10.21 hours for Douai on the Surrey Flying Services D.H.9 with three passengers. He arrived back at Croydon at 08.29 hours the following morning and later the same day left for Cherbourg with one passenger. He returned to Croydon on July 11. He is a glutton for work.

On July 10, Lieut.-Col. Minchin and Mr. Mayer left Dijon at 06.30 hours and arrived at Croydon at 12.06 hours, thus concluding their flight from London to Cairo and back to London, on the Bristol Bloodhound (450 h.p. Bristol Jupiter engine).

They left Croydon on June 30 and arrived at Cairo on July 2. Three hours later the same day they left Cairo and flew to Sollum. The next day they reached Brindisi after landing at Athens, the Greeks, in response to telegrams, denied ever having seen them, and so they were reported missing till they actually arrived at Brindisi. Here they were unfortunate in breaking a tail-skid in landing, which caused some days' delay.

They left Brindisi on July 9 and reached Dijon. On the following day they flew from Dijon to Croydon.

Later the same afternoon they flew over to Hendon and competed in the impromptu handicap race organised by the Royal Aero Club in connection with the King's Cup Race. In all a thoroughly sporting effort.

During the past week there was much A.D.C. Aircraft activity. Sq. Ldr. Jones, Mr. Courtney and Mr. Perry carried out numerous test flights on their King's Cup mounts and in addition the last two pilots were flying a D.H.9 and a Bristol Fighter respectively.

Mr. Cobham's Flight.

Mr. Alan J. Cobham's flight to Australia and back, which was so tragically interrupted by the death of his engineer, Mr. A. B. Elliott, who died in the R.A.F. Hospital at Basra as the result of a wound from an Arab sniper, was to be resumed, all being well, on July 13.

Mr. Cobham will take with him Sjt. Ward, of No. 84 (Bombing) Squadron, R.A.F., who has been lent to the expedition by the Air Officer Commanding, Iraq Command.

In connection with Mr. Elliott's death, *The Times* correspondent in Basra states:—

The feat of locating the spot where Mr. Elliott was shot was a remarkable one. On the way to Basra Mr. Cobham was flying in a visibility of about 700 yards. Yesterday, when Squadron-Leader Stodhart [Presumably Sq. Ldr. D. E. Stodart, D.S.O., D.F.C., O.C. No. 84 Sqdn.—Ed.] took him up, the visibility was 30 miles, yet the place was found within a mile. It is on the south bank of the Hamar Lake, where dwells the notorious Beni Assad tribe and part of the Beni Malik tribe. They are people who lead a semi-amphibious life, residing on small islands in the lake. Their territory begins where cultivation ends; they live by gathering reeds, breeding buffaloes, and fishing; their habitat is not fixed, and they may move 50 miles in a day to the north or south. They are a wild and lawless people and are well armed.

The Hamar Lake is more popularly the Hamar marshes. From that area to Basra there is a broad belt of loose sand, which in a high wind may be blown 10,000 ft. into the air, a fact which explains the aviation difficulties here.

Hikmet Beg Suleiman, the Minister of the Interior, has instructed the Mutessarif of Basra to call on Mr. Cobham to express the regret of the Government of Iraq at the death of Mr. Elliott.

A. B. Elliott.

It is with the deepest regret that one has to record the death of Mr. Arthur B. Elliott as the result of a bullet fired by an Arab. Mr. Elliott, as all the World knows, was Mr. Cobham's engineer. Mr. Cobham and Mr. Elliott were flying from Baghdad to Bandar Abbas, and when about 120 miles from Basra, when the machine was flying only about 50 ft. up, Mr. Elliott was disabled. It was at first thought that something had exploded in the cabin, but it was subsequently proved beyond doubt that Mr. Elliott had been hit by a bullet fired from the ground.

Mr. Cobham had to fly the remaining 120 miles to Basra before he could get assistance. Here Mr. Elliott was taken to the R.A.F. Hospital, where an immediate operation took place. He was operated on again the next morning, July 6, but he died shortly afterwards.

Arthur Elliott would certainly have done big things in aviation. Although he had flown as engineer with Mr. Cobham in many of his long European flights beforehand, he first came into prominence when he made the journey to Rangoon and back with Sir Sefton Brancker and Mr. Cobham. His impromptu speech at the banquet given to the trio on their return is still among one's happiest memories. Following that came the great flight from London to Cape Town and back.

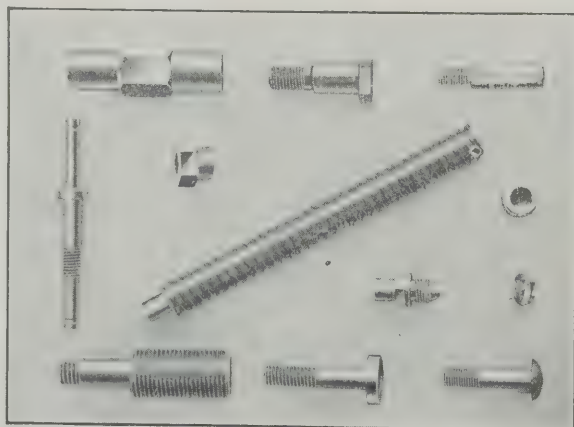
On all these journeys he worked indefatigably on whatever engine or job about the machine fell to his lot. One would not say that the flight would have been impossible without him. But only with the help of a man of his combined ability, skill, energy, and steadfastness of purpose could they have been accomplished.

He had a delightful sense of humour, as was shown by those little "Cameos" of the Cape Flight which he contributed to *THE AEROPLANE*.

Just before the start of the present flight Mr. Cobham told one how much of the successes of his biggest flights were due to Mr. Elliott. He said that once he had arrived at a landing ground he could get on with the work he came to do. He simply left the care of the machine and engine to Mr. Elliott, knowing perfectly well that all would be ready to start at the appointed hour.

To his mother and brother and his other relatives one offers the deepest sympathy in their loss. Mr. Cobham has lost a

RUBERY, OWEN & Co. DARLASTON, SOUTH STAFFS.

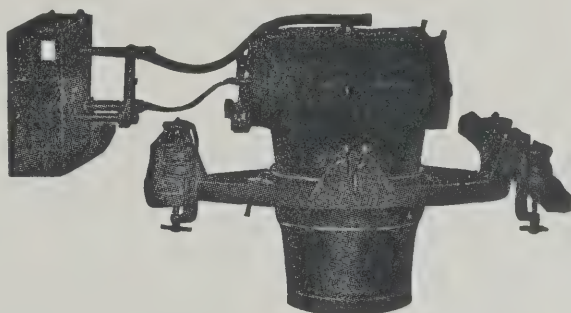


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| Weight loaded 2,410 Kilos. | Compr. 5.8: Compr. 5.0: |
| Maximum Speed | 235 Kms. hr. 228 Kms. hr. |
| Climb to 5,000 m. | 23' 30" 26' 30" |

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very valuable and loyal co-operator and the De Havilland Aircraft Company have lost a member of their staff for whom all had the highest regard.—G. D.

The following telegrams were sent last week by Sir Samuel Hoare, Secretary of State for Air, on the death of Mr. A. B. Elliott:—

To Mr. A. J. Cobham.

"Deeply grieved at tragic interruption of your enterprise."

To Mrs. Elliott (Mother).

"Please accept my profound sympathy in the tragic death of your gallant son, to whose high courage and technical skill Mr. Cobham's brilliant series of successful long-distance flights owed much."

ENTRIES FOR THE PARIS AERO SHOW.

The management of the Paris Aero Show has issued a communiqué of which the following is a translation:—

THE TENTH SALON OF THE AERONAUTIC.

We have announced the tenth Salon of the Aeronautic will hold itself this year at its habitual emplacement at Paris at the Grand Palace of the Elysian Fields from the 3 to the 19 of December approaching. This Exposition has already received the adhesion of a grand number of French and strange houses; to this subject we recall that the terms of participation should be addressed to the Commissariat General, 9 Rue Anatole de la Forge at Paris.

We signal equally that the houses inscribed before the 31 July approaching will participate alone at the draw by lot of the emplacements of their respective classes.—After this date the inscriptions will continue to be received, but the places will be fixed following the disponibility.

In other words, firms who enter before July 31, will stand their chance of drawing a good place in the ballot for stands, but after that date they will have to go where they are put. Will English firms who intend to exhibit please note?

A FOKKER JOB IN AMERICA.

Reports from Amsterdam state that the Philadelphia Rapid Transit Company, one of the largest American transport companies, which has monopolised the tramways, subways, taxis and motor-buses in Philadelphia, and has established a parlour-car motor-bus service to Baltimore, Washington and New York, has now decided to include also aerial transport in their business scheme. Recently the President of the P. R. T. Company, Mr. T. E. Mitten, made a tour of Europe to study the operation of the various air lines and to investigate types of aeroplanes which would best suit his purpose.

After having flown on a number of European air lines he

chose the type VIII-3m, Fokker, the three-engined monoplane which performed so well in the Ford Trophy Tour and with which Commander Byrd is alleged to have flown to the North Pole and back, and this type will be the standard equipment of the P.R.T. lines.

An Air Line was to start between Washington and Philadelphia on July 1, in connection with the Philadelphia Sesqui-centennial Exhibition. The flying field of the Navy Yard right next to the Exhibition, has been put at the disposal of the P.R.T., and in Washington the Company has its own flying field situated within eight minutes from the White House. As the P.R.T. has no experience of air-line operation the Company has charged the American Fokker Aircraft Corp. to install the flying fields, to organise the ground service, to appoint the pilots, and to superintend the upkeep and repair of the aeroplanes and engines.

PERSONAL NOTICES.

DEATHS.

EVERY.—On July 6, at Razmak, India, as the result of a flying accident, L-AC Cecil Robert Avery, R.A.F.

HARRIS.—On July 6, at Razmak, India, as the result of a flying accident, Clement Conrad Harris, Lieut., R.A., and Flg. Off., R.A.I. Mr. Harris was detached from the Royal Regiment of Artillery for service with the R.A.F. on Aug. 1, 1924. He was posted to No. 54 Sqn. in September, 1923.

HOOPER.—At Harlow, on July 9, as the result of a motor-cycle accident, AC. Martin Hooper, R.A.F., Duxford.

RICHARDSON.—On July 6, suddenly, at Widmore, Stoke Mandeville Aylesbury, Winifred Mary, beloved wife of Capt. Christopher Ridley Richardson, E. York. Regt. and R.A.F., aged 35.

MARRIAGES.

MICHELL—WALKER.—On June 26, very quietly, in Dunmow, Flg. Off. Victor Michell, R.A.F., of West Mersea, Essex, to Marjorie Walker, only daughter of the late Mr. Frederick Walker and Mrs. Walker, of Dunmow, Essex.

WINTERBOTTOM—GILLEY.—On July 1, Capt. W. R. Winterbottom (late R.A.F.) to Marjorie Gilley, of Tortington Park, Sussex, only daughter of the late John Gilley.

FORTHCOMING MARRIAGE.

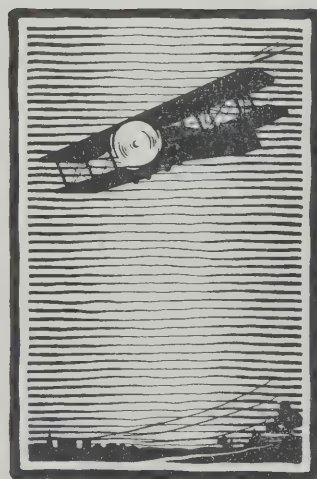
HALFORD—DAVIES.—The engagement is announced between Flt. Lt. Wallis Halford, R.A.F., eldest son of Mr. and Mrs. G. J. Halford, Cleeve Prior, Worcestershire, and Mary, only daughter of the Rev. J. and Mrs. Wynne Davies, Horton Rectory, Slough, Bucks.

BIRTHS.

CUNNINGHAM.—On July 8, at The White Lodge, Heswall, Cheshire, Lylie, wife of Col. J. A. Cunningham, D.S.O., D.F.C.,—a daughter.

LEEMING.—On July 9, at Owlpen, Bowdon, Cheshire, to Gladys, wife of John Leeming—a son.

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THE AEROPLANE—JULY 21 1926

AIR RACING.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. G. G. G.

Vol. XXXI. No. 3.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

"YET GUARD (AND LANDWARD) OR TO-MORROW SWEEPS
"THY WARSHIPS DOWN THE BAY,"—(KIPLING.—Hong-Kong.)



(Photograph by Ah Fong, Wei-Hai-Wei.)
FARTHEST EAST:—A Fairey III D Seaplane (Napier engine) of No. 444 (Fleet Reconnaissance) Flight, R.A.F. (Hong Kong) at Wei-Hai-Wei, N. China. No. 444 Flight is in H.M.S. "Vindictive," which is the first British cruiser to be equipped with catapult gear.

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An interesting booklet describing best methods of tinning, pouring, fitting, etc., with useful notes on tools, oilways, lubrication, etc.

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AVRO "AVA"

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bomber and coastal,
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landplane fitted
with two 670
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

JULY 21,
1926.

THE AEROPLANE

Incorporating
Aeronautical Engineering

VOL. XXXI.
No. 3.

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U.S.A., 1 Year, \$8 50c.

ON AIR RACING.

Now that we have finished with the King's Cup Race, which is apparently to be our only air race this year, not counting the Light Aeroplane Gymkhana at Lympne as serious air racing, the time seems fitting to sit down and think what is going to happen to air racing in the future.

In the days of one's youth a favourite occupation of the newspapers, when nothing much was happening politically and there did not happen to be any important wars going on in the British Empire and there was no popular murder to discuss, was to start a correspondence on the eternal question "What shall we do with our boys?" To-day we may well discuss "What shall we do with our air races?"

One thing very evident about the King's Cup Race ten days ago was that, to use the theatrical phrase, it "failed to attract." It did not attract any new machines as competitors, with the exception of the Bristol Badminton. It did not attract the public to Hendon. It did not attract much attention at the various turning points, except for the attention which was industriously worked up by the Gloucestershire Company at Cheltenham. And it did not attract anything like as much attention in the Press as it would have done if there had been genuine excitement about it.

It cost all the firms who were concerned in the race as competitors quite a good deal of money. At any rate it cost each firm a good deal more money than a sum which if expended in judicious advertising in THE AEROPLANE newspaper, would have increased the prestige of that particular firm very largely all over the World.

The net result was that the only people who really made anything out of the race were the de Havilland Company and A.D.C. Aircraft Ltd., because of the victory of the Moth with its Cirrus engine.

Compared with modern ideas of speed, the fastest speed, 152 m.p.h., was not fast enough to be any particular advertisement for anybody or anything, considering that some countries have two-seat fighters and reconnaissance machines which are a good deal faster, and that nearly all countries (actually including ourselves) have single-seat fighters which are very much faster.

Undoubtedly the race was worth while, from the point of view of progress in British Aviation, because, owing to its being a handicap, a Moth was able to win. And the consistent flying of that machine by Mr. Broad, together with

the fact that three out of the five machines to finish were Moths, has given a tremendous advertisement not only to that particular make of aeroplane but to the type of machine which is best suited to the uses of private aviators.

But the King's Cup Race was not serious air racing.

At Brooklands, even when touring-cars are used for racing, some pretence is made of making them into racing cars. Baby Austins are fitted with fish tails and fancy exhaust-pipes, and moderately fast cars, which respectfully make way when overtaken by the Editorial Talbot on the road, put up phenomenal speeds when faked for racing.

One imagines that if anybody went to the trouble and expense of faking a Moth by putting on special racing wings and streamlining the fuselage and fitting a special undercarriage and boosting the engine and so forth the outfit could be made to do something very like the fastest time which was actually done in the King's Cup Race. But as it was, that which ought to have been one of the World's great Classic Races became in fact a reliability tour coupled with an exhibition of superb piloting and course-finding.

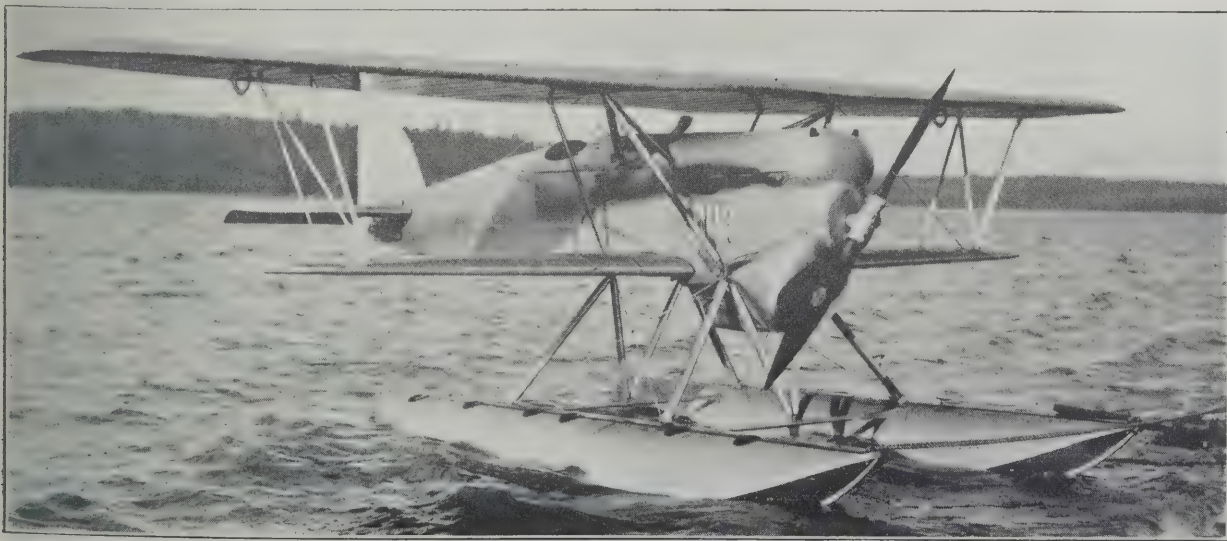
OUR TWO CLASSIC RACES.

Our Royal Aero Club has what might be called the copyright title of two real air races, the King's Cup Race and the Aerial Derby. How little the copyright of the latter is worth may be judged by the fact that quite a number of the newspaper people called the King's Cup Race the Aerial Derby. Which made one feel sad when one thought of how the late Richard Gates used to bring anything between 60,000 and 100,000 people to Hendon and drag about 2,000,000 other people out of the seclusion of their Saturday afternoon's rest to see his real Aerial Derby machines careering round the hundred-mile circuit of London.

That was the way air racing ought to be run. And that is how it will be done again some day when the Aircraft Industry awakes to the fact that air racing is worth while as an advertisement, and when a few real sportsmen go to the expense of having real racing machines built for them.

WHENCE THE ENTRIES?

Meantime, what are we to do about air racing? The present arrangement of things as done, or left undone, by the Royal Aero Club, is perfectly hopeless. No doubt a good deal of the chaotic state of affairs is due to the Air Ministry, because a machine which is down in the deepest depths of



THE LATEST NAVAL FIGHTER.—The Boeing FB-3 Pursuit biplane (600 h.p. Packard 2A-1500 engine) now being produced in numbers for the U.S. Navy by the Boeing Airplane Co., of Seattle, Wash. It is fitted with one 50 cal. gun and one 30 cal. gun, and as a float seaplane has a speed of 161 m.p.h. The FB-3 can also be fitted with a land undercarriage, when it would be much faster than our racing machines.

the Secret List one day, as a secret known to everybody but ourselves, may suddenly be "released" and become absolutely public property just too late for it to be entered in a flying competition.

For example, there are several machines being built for the Air Ministry at the moment which the makers hope will be record-breaking seaplanes. None of them has any real war value, so there is no earthly reason why they should be kept secret. And they are certainly not secret to the Air Authorities of any other nation, considering that our aircraft works and drawing offices are infested with Belgians and Germans and Frenchmen and Bolsheviks and so forth working as ordinary employees and in a position to acquire minute knowledge of the details of these machines.

But, though every foreign nation may know all about these secret non-military machines, we of the staff of THE AEROPLANE may not mention them in print. And the actual manufacturers of them cannot arrange to enter them in any competitions next year because some temperamental official at the Air Ministry may take it into his head for no reason whatever to insist on any or all of these machines being kept secret until the day after it is too late to enter them.

Or a rule may be made that they must remain on the Secret List till they have passed their flying trials at Felixstowe (with floats) or at Martlesham (on wheels). And then their tests may be held up there because the test pilots or measuring officials happen to be busy testing some other machine which amuses them more, or which has to be put through its tests, for some reason or another, before the speed machines can be tested. And that is all supposing that the Aero Club has fixed any kind of a programme whatever.

FIXING A PROGRAMME.

Unfortunately the Aero Club's idea of fixing a programme is about on a level with its idea of fixing a course for the King's Cup Race. It chops and changes its dates and rearranges its programme in an irresponsible manner which would be delightful were it not for the fact that it is not good for business.

Before any firm can be expected to take seriously to the expensive game of building racing machines the Aero Club must lay down definite dates. And it must stick to them.

All the important dates in the social life of England are fixed a year or more beforehand. We can get to know already the dates for next year's Henley and for next year's Wimbledon and next year's big horse races and so forth. Therefore the Aero Club can easily fix the date for any big air race which it proposes to hold so that that date will not clash with any of the older, and at present more important, functions.

The dates for the Aero Club's competitions in 1927 ought to be published not later than the first week in November of this year. And at the same time the Club ought to publish the conditions and the courses for these competitions. At any rate, if it cannot fix definitely on the time and place for whatever it intends to hold in the way of light aeroplane competitions next year it ought to fix the date and the course and the conditions for the King's Cup Race and the Aerial Derby if it is going to hold these two races.

Then manufacturers will have some chance of making up their minds whether they are going to build special machines.

And if the Club is going to hold a Seaplane Competition for the secret seaplanes which are being built for the Air Ministry it ought to come to an understanding with the Air Ministry as to whether those machines are going to be allowed to compete or not and it ought to fix the course and conditions for that competition also.

That being that let us now consider the question of the races themselves.

THE DE HAVILLAND PARTY.

On Wednesday evening last, July 14, the de Havilland Company gave a party at Princes Restaurant to hand over to Sir Charles Wakefield, as the entrant of the winning Moth, the King's Cup which had already been presented to Mr. Broad at Hendon by the Duke of Sutherland at the finish of the race the previous Saturday. Nearly all the competitors in the race were present except those who were compelled to be somewhere else by force of business, and most of the A.D.C. people were also there.

It was quite a cheery gathering. There were about twenty-five in the party. And Mr. St. Barbe, who was responsible for the organisation, hit on the original idea of having the dinner in the main restaurant instead of in a private room, thus avoiding any possibility of speech-making, an arrangement which was much appreciated both by those who would have had to make the speeches and those who would have had to listen to them. Also there was a certain piquancy in watching the puzzled expressions of the members of the non-aeronautical public who came there to dine and found the raised floor at the end of the room occupied by one long table surrounded by twenty-five or thereabouts more or less serious-looking men in dinner jackets.

Sir Charles Wakefield, who had been prevented by urgent affairs from being present at Hendon when his entry won the Cup, occupied the place of honour in the middle of the table and was undoubtedly pleased at the very genuine congratulations which he received on having won a prize after having been the giver of so many prizes for so many years. As one remarked last week, he has been regarded as a kind of permanent prize-mine for so long, that actually winning something himself came to him as quite a new sensation. One only hopes that in the future prize winning will become as much a habit to Sir Charles as prize giving has been hitherto.

After dinner was over and everybody had drunk the healths of Sir Charles and Mr. Broad, and after the resourceful Mr. St. Barbe had provided dance partners for those so inclined, the rest of us became involved in arguments about aviation.

One began by discussing club flying and Moths and Civil Aviation generally at considerable length with Mr. Sparks, the devastatingly competent chief instructor at the London Aeroplane Club. The results of that will certainly influence one's views in future. Princes may seem a queer place in which to talk serious Aviation. But just as there is more serious religion discussed in the night clubs of London than there is in most Church Conferences, so more valuable views on flying may be gained in a restaurant than on an aerodrome.

After that one drifted across to a discussion with Captain Geoffrey de Havilland and Colonel Sempill and Mr. Charles Walker and Mr. Colebrook of *The Times* on Air Racing in general. Here again one naturally received considerable enlightenment.

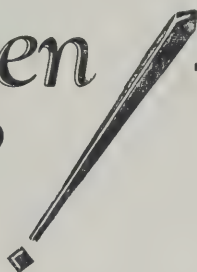
Having known Captain de Havilland for some fourteen years one can say that though one has hardly ever been completely in agreement with him on anything, except of course on the construction of aircraft, on which subject his products prove that there can be no argument, one has never discussed anything with him without being wiser as the result. So, although what one has to say on the subject is probably quite opposed to the views of Captain de Havilland and Colonel Sempill and Mr. Walker it is at any rate the result of our argument.



AT ABOUKIR.—One of the machines belonging to the Cape Flight, R.A.F., after it had been fitted with floats for the last lap of the return journey. Aboukir is the R.A.F. Stores Depot for the Middle East, and, although it is undoubtedly a delightful spot, from the military point of view it seems rather vulnerable to attack from the sea.

“Something has been
achieved indeed.”

Sunday Times



FOUR Fairey aeroplanes, each fitted with a single Napier Lion engine, flew from Cairo to Cape Town and back via Cairo to England.

In connection with this remarkable flight, attention is drawn to the following facts:—

The Napier engines were standard, being taken from Stores as for ordinary Service use.

The number of engine miles flown was 56,000.

No engine was changed during the whole flight.

No mechanical trouble of any description was experienced.

Machines flew in formation and kept to prearranged schedule times throughout.

Flight carried out through tropical heat, rain and sandstorms.

For the first time on such a flight no difficulty was experienced in leaving high altitude aerodromes in rarefied air with fully loaded machines.

“It may be fairly simple nowadays to fly one machine half round the world, but when four machines do it together, showing the flag, as it were, any one engine or machine of which may break down, and not one of them does, then something has been achieved indeed.”

Sunday Times, 4th July, 1926.

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SPEED AND RELIABILITY.

Of the two great Classic Air Races which we ought to hold next year one is convinced that the Aerial Derby ought to be a pure speed race and that the King's Cup Race ought to be something in the nature of a test of reliability—though not what is usually called a reliability trial to distinguish it from a race.

The Aerial Derby ought to be a scratch race for speed machines without any handicapping either by formula or by calculation or by guess-work. It ought to be simply an endeavour to discover who can build the fastest aeroplane. And it ought to be open to aeroplanes and pilots of all nations.

There should be one regulation and one only. That should be that all competing machines must be able to land at not more than fifty miles per hour.

Every competing machine should go through a landing test under official observation on the day before the race itself, or earlier if convenient. That would do away with any charge, such as has been known in connection with previous Aerial Derbys, that the Aero Club were encouraging pilots to break their necks. It would force designers to produce potentially useful flying machines. And it would definitely help progress in design.

Given the fifty-mile-an-hour landing speed, then every maker should be free to use whatever engine he liked and it would be up to him to get as much speed as possible.

According to the rules of the Pulitzer Trophy Competition, the American racing machines have to be able to land at seventy miles an hour. Yet they achieve a speed of 250 or 260 miles an hour. Given a landing speed of 50 m.p.h. if we can get a speed of 250 m.p.h. then we are making genuine progress in aircraft design. For, one of the first and most important steps towards safety in aviation, is the achievement of the highest possible top speed with the lowest possible landing speed.

A SPEED RACE.

The race should be flown over a course round London of about 100 miles. With a 50 m.p.h. landing speed any competent pilot should be able to get down safely if his engine should stop anywhere along such a course.

The total length of the race should be 600 miles, to be flown in three stages of 200 miles each. That is to say, the competitors should go twice round the course and then land to refuel and stop for a certain stated time. Thus there would be two intermediate landings in the race.

All competitors should start from scratch. There should be no difficulty, with machines which have a landing speed of 50 miles per hour, and so have a correspondingly slow get-off, in starting six or seven of them in a row at Hendon. Considering that nine single-seat fighters can get off in perfect formation, there should not be the slightest difficulty in getting six racing machines away in a line—at any rate with such pilots as we have to-day.

There can hardly be any likelihood of six machines being built for the race in the next year. There is a remote possibility that two might be built, and so the first race under the new conditions would simply be a duel.

If ultimately so many machines were built for the race that they could not all be started in line, then the race could be flown in heats, or eliminating trials could be held.

Even if only one firm had the enterprise to build or enter such a machine for the race it would be worth while to let that machine have a fly-over, just by way of making a start. For only by making the Aerial Derby a scratch race can the race ever achieve the distinction which belongs to it by right.

THE WRONG WAY.

The old idea of holding a handicap race in connection with the Aerial Derby, and getting slow machines all mixed up with fast machines, and having the scratch man start a lap or more behind the limit man, is merely confusing to the public and spoils the whole thing as a race. Also it is infernally inconvenient to the unfortunate people who have to get up early to see the limit man off in a long race and then sit for hours waiting for the scratch man to start.

But if the Aero Club will have the courage to tackle the problem firmly, and will lay down the principle that the Aerial Derby is to be a scratch race for speed machines, then we may with luck and energy make the Aerial Derby a World's Classic Speed Race.

KING'S CUP SUGGESTIONS.

The King's Cup Race is another matter altogether.

One seems to remember that when the first Cup was presented to the Royal Aero Club His Majesty expressed the desire that the conditions of the race should be arranged in the manner best calculated to produce progress in British Aviation. In this sense progress may very well mean the popularising of aviation, or, as Sir Samuel Hoare puts it, making the people of this country air-minded, just as much as actual progress in design. For if the nation as a whole takes a vivid interest in flying, progress in design must naturally follow.

If there were numerous flying clubs all over the country, each with hundreds of members keenly interested in the details of the machines which they had to fly, and if we had many private owners experimenting with new gadgets and making minor alterations in their machines, as keen owner-drivers used to do in the early days of motoring, we should make a very great deal of progress.

On the principle that the shoemaker's wife is always the worst shod, the professional pilot (whether Service or Civilian) is more or less content to fly whatever he is paid to fly. He may grumble about the machines, and the way the instruments work or do not work, and the way the controls are arranged and so forth. But even if he wished to do so, he has not the power to make alterations in the machine.

Anyhow, he seldom flies one machine long enough to take a keen interest in it. And so his mount never acquires a personality for him as it would do if it were his own property or if he had to fly that machine and no other. On the other hand the owner-pilot or the club member, who always has to fly one machine or at most two or three similar machines, is much more likely to find little difficulties and remedy them, or to think of little improvements and get them put into his machine.

The modern motor-car is very largely as convenient as it is because of the alterations and improvements which have been made by owner-drivers. The paid driver merely drives what he has got to drive. Therefore if the King's Cup Race can be made to interest the great mass of the British Public it will be serving its purpose in promoting the progress of British Aviation.

THE KING'S CUP COURSE.

With that idea in view there is no doubt that the course of the race ought to be spread over as much of the British Isles as is possible. The question is whether the course should be, as it was on July 10, over two circuits covering the Southern part of England, or whether it should be an extended Circuit of Britain as it was originally.

In the course of our discussion the other evening Mr. Colebrooke of *The Times* suggested that a race from London



AN AMERICAN COLONIST.—A Fokker "Universal" monoplane (200 h.p. Wright Whirlwind engine), constructed by the Fokker Aircraft Corporation, of Hazebrouck Heights, N.J. This type of machine is being used on Contract Air Mail Route No. 1, which is to run between New York and Boston, Mass., and is operated by Colonial Air Lines, Inc., of Naugatuck, Conn.



*The King's Cup Race
won by a de Havilland "Moth"
piloted by Capt. Broad who writes—*

TELEPHONE.
COLINDALE 6180-6163

STAG LANE AERODROME,
EDGWARE
MIDDLESEX.

12th July, 1926.

Messrs. The Fairey Aviation Co.Ltd.,
Hayes,
Middlesex.

Dear Sirs,

I am sure you will be interested to hear how very satisfied I was with the Fairey-Reed Duralumin Airscrew which was fitted to my 'Moth' in the King's Cup Race.

The extraordinarily high average speed seems to me to be a wonderful demonstration of the efficiency of the propeller, and I can say that I was freed of any anxiety as to its standing up to over sixteen hours of full throttle, during which time I passed through several very violent rainstorms.

May I congratulate you upon your product?

Yours truly,
H.S. Broad

FAIREY-REED
ALL-METAL AIRSCREW

*Sole Manufacturers and Licensees of Reed
Patent Airscrews for the British Empire:*

FAIREY AVIATION COMPANY LIMITED
HAYES MIDDLESEX

to John o' Groats, and from John o' Groats to Land's End (via Glasgow and Bristol, so as to prevent the machines from flying a compass course down the middle of the Irish Sea), and from Land's End to London would stir up a great deal of interest all over the country and would moreover give the newspapers something to write about.

The suggestion seemed to meet with something like approval from the other parties to the discussion. And one certainly thinks that the idea is very well worth considering.

There has always been something about the Land's End to John o' Groats course which has appealed to the public. People have walked in record time from Land's End to John o' Groats. In the early days of cycling, the End-to-End Record, as it was called then, was one of the most coveted distinctions. And though motor record-breaking on the road has always been severely discouraged by the Royal Automobile Club, a good many car-drivers have done unofficial speed drives from Land's End to John o' Groats. Also one remembers one very fine officially observed performance when a Rolls-Royce car was driven from Land's End to John o' Groats on top gear all the way without changing, just to show what the car could do.

In these days the few hundred miles from Land's End to John o' Groats is not worth considering as an aeroplane course, but a more or less triangular course from London to Land's End, thence to John o' Groats, and thence to London is quite long enough to provide a two-days' course.

OBJECTIONS.

There certainly are many objections to such a course. First of all thanks to our variegated climate we might have perfect weather in the South of England, North Sea fog at John o' Groats, and heavy rain at Land's End. Also there is the difficulty of finding reasonable landing ground at Land's End or John o' Groats. And there is not much in the way of comfortable landing surface between Glasgow and Wick (which is the nearest town to John o' Groats) or between Bristol and Land's End.

Still, after all, Progress in Aviation includes making aeroplanes practical vehicles of transport and if they are to become such, they must be capable of operating in any sort of weather and of getting down on any sort of ground. Or else they must be capable of stopping up in the air with something like reasonable reliability—a quality which was not demonstrated in the last King's Cup Race when nine machines out of the fourteen starters were put out of the race by forced landings.

There is also the objection that a round-Britain course would cost the Aero Club a good deal more in the way of organising landing grounds and control points and so forth than would a course such as that used on July 10.

GLOSTER ENTERPRISE.

Nevertheless, the Gloucestershire Aircraft Company showed the other day that with proper enterprise and organisation even a turning point can show a profit. Mr. David Longden told one that the Cheltenham Hospital will benefit to the extent of about £100 out of the gate money taken at Brockworth Aerodrome on the Saturday of the King's Cup Race.

All the organisation was done by members of the staff of the Gloucestershire Company. An excellent flying entertainment was arranged to keep the public amused while waiting for the competitors in the race. The event was thoroughly well advertised in the local papers and everybody was thoroughly pleased with the result.

An immense amount of good was done locally, because the Mayor of Gloucester and several of the notabilities of Cheltenham were taken up as passengers in the school machine which was lent in such a sporting spirit by the Bristol Company. And altogether the progress of British Aviation was materially assisted.

What was done at Cheltenham could equally well be done at turning points or stopping places anywhere else in the British Isles, always supposing that there happened to be people at those points with the intelligence and the keenness of the officials of the Gloucester Company. And it would be the business of the Royal Aero Club, as organisers of the race, to fix their points where they were sure of having the thing done properly.

TURNING POINTS.

They could at any rate be sure of two very good points at Newcastle and Glasgow. The people who are running the Newcastle-upon-Tyne Aero Club so successfully would make a very much better job of a landing point at Cramlington Aerodrome than it was ever possible to make of the Town Moor. And the increased interest which has grown in Glasgow recently, thanks largely to the work of the Scottish Branch of the Royal Aeronautical Society as energised by Mr. Buyers Black, and the work done by the Beardmore Aviation Engineering Society, together with the fact that there is an Auxiliary Air Squadron and an R.A.F. Reserve Training centre at Renfrew assures plenty of local interest

there. The position there to-day is entirely different from what it was two years or even a year ago.

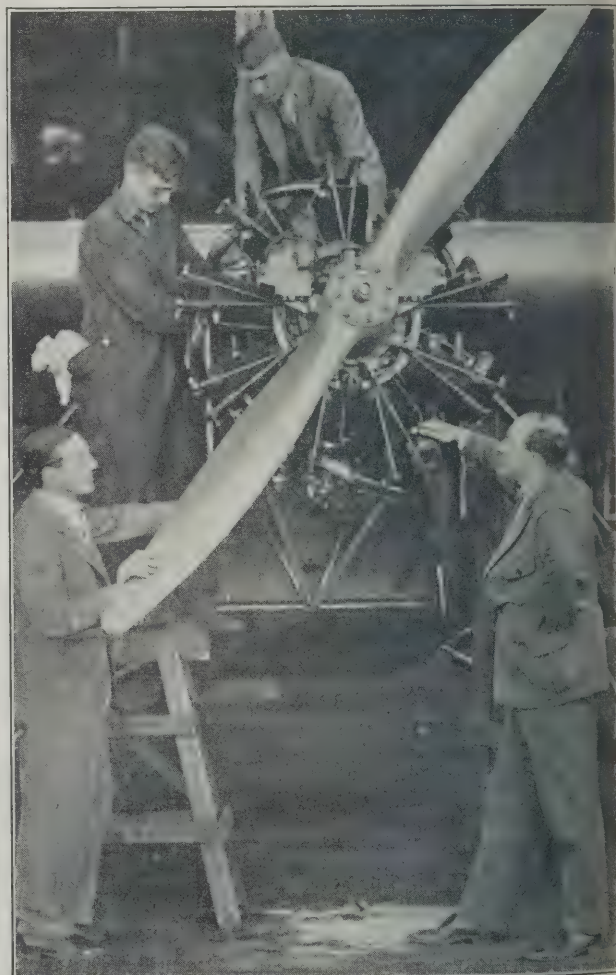
Much the same thing may be said of Bristol where, incidentally, thanks to the energy of the Bristol Company, an immense amount of interest has been stirred up in the course of previous King's Cup Races.

On the whole therefore one thinks that a course starting from London with landings at Newcastle, John o' Groats, Glasgow, Bristol and Land's End, or the other way round, with an all-night stop at Glasgow, can be recommended.

There might well be additional controls, or observation points, at Sherburn (the Yorkshire Club's Aerodrome), Edinburgh, Dundee, Inverness, Fort William, Carlisle, Chester, Newquay, Falmouth, Plymouth and Portsmouth, so as to make the race a real test of course-finding, and to assure the competitors passing within sight of points at which persons interested in flying would be sure of seeing them. Also those points would bring the machines near a number of aerodromes on which landings could be made if desirable, and at which help could be got to make minor repairs.

A MATTER OF REGULATIONS.

Incidentally, that suggests one point on which the rules for the race should be made very clear. In the King's Cup race of three years ago the machine flown by Mr. Courtney, which was otherwise almost a certain winner, was put out because a flying-wire broke. The rules stated that no outside assistance should be given to competitors in the course of the race, and that any work done on the machine must be done by the pilot and his passenger if any. When the machine landed at one of the controls there was actually a flying wire of exactly the type required to be got at the



NEW AMERICAN COLONISTS.—Mr. Biddlecombe, late of the Air Ministry, and Mr. A. H. G. Fokker, late of Holland supervising the erection of a Fokker "Universal" monoplane (200 h.p. Wright Whirlwind engine) at the factory of the Fokker Aircraft Corporation. This type of machine, together with the three-engined Fokker type are being used by Colonial Air Lines Inc. on the New York—Boston Air Mail Route. Mr. Biddlecombe is the General Manager of the latter company. There is interest in noting that while in the United States the term "Colonial" implies respectability, by reason of the relative antiquity of the New England colonies our fellow-subjects the Canadians and Australians always seem to be ashamed of being Colonials.



THE
KING'S CUP RACE

WON BY CAPT. H. S. BROAD, A.F.C. ON A

MOTH

Entered by SIR CHARLES WAKEFIELD, Bart.

1,480 Miles at 90.4 m.p.h.

THE 27-60 H.P.

CIRRUS

ENGINE RAN UNFALTERINGLY

at FULL THROTTLE for

16 Hours 22 Mins. 40 Secs.

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aerodrome and it could have been fitted in a few minutes. But the rules prevented the pilot from accepting the wire, even if he had fitted it himself.

In the last race, on the other hand, competitors could have anything they liked done to their machines between finishing on Friday night and starting again on Saturday morning. And most of the competitors had a whole crew of mechanics examining and adjusting things.

For example, just for safety's sake, Mr. Broad's engine was given a top overhaul but it was not found necessary to do anything to it. Even if the rules had prohibited the doing of work on the engine it would have got through all right.

And, as another example, the engine used by Sq. Ldr. Jones, who did fastest time, required certain spare parts, and, as none were available on the spot, the necessary parts and the tools required to fit them were borrowed from the R.A.F. at Northolt. The R.A.F. played up in a thoroughly sporting spirit and actually flew the required material over to Hendon during the night. But if they had not been available Sq. Ldr. Jones would not have followed up his 1924 success by doing fastest time on this second occasion.

So, in future races, the Aero Club rules will have to be very clear as to what is and what is not allowable in the way of outside help to competitors.

THE KING'S WISH.

The next question is, what can be done in the way of rules to encourage progress in the actual machines which compete in the race.

As one indicated last week, the only really new machine in the King's Cup Race was the Bristol Badminton. All the rest varied between two and eight years of age.

The Aero Club, if it were sufficiently daring, might limit the entries to two-year-olds. And if the Air Ministry really wanted to help in carrying out His Majesty's intentions when he presented the Cup it might very well sanction the use in the race of any machine which was on the Part Publication List, which would necessarily include any machine which had already appeared at the R.A.F. Pageant of the same year.

The King's Cup Race this year would have been much

SAFETY FIRST.

For the good of the progress of Aviation nobody has any right to take either unnecessary risks, or risks which do not entail commensurate benefits. And in this matter of taking risks one has a very large size in bones to pick with Lieut.-Colonel the Master of Sempill. It concerns that flight by four Moths across the Irish Channel on July 12.

One regards Colonel Sempill as being among one's very best friends in aviation. One has unbounded admiration for his energy and initiative and enterprise. And one has the greatest respect for his technical capacity as an engineer, for his practical ability as a mechanic and for his skill as a pilot. But there are times when one feels bound to criticise his activities.

Quite a long time ago one criticised him for taking a Naval Aviation mission to Japan and teaching the Japanese Navy to fly. It is perfectly true that if he had not done so some other nation would have done it instead, and the British Aircraft Industry would have lost many hundreds of thousands of pounds' worth of orders. One's only grievance is that Colonel Sempill did his job too well and taught the Japanese Navy how to fly and how to run their schools and repair shops just about as well as our own Naval Aviation people do those things. The question is whether our financial gain is worth what it will cost us when the Japanese become our enemies and attack Australia.

This affair of the Moths is quite another matter. Colonel Sempill, with Mrs. Sempill as passenger, and accompanied by Mr. Broad and Mr. Frank Courtney and Major Hemming, with Mr. Tymms as passenger, on other Moths, took the risk of flying over sixty-four miles of sea, with very little hope of being picked up if they had had to come down.

All six of them are extremely valuable people in British Aviation. And one does not think that they were justified in risking their valuable lives on such a flight.

Of course, their excuse is that they had perfect confidence in their Cirrus engines and in the Moths and were justified in taking the risk. But what the risks were may be judged by actual facts.

On the way up to Sealand, where they refilled with petrol before starting across the Channel, Major Hemming, noticing that Mr. Tymms had gone to sleep, leaned forward to bang him on the head and wake him up. Whether Major Hemming objected to having a sleeping passenger or whether he wanted to call upon Mr. Tymms' skill as a navigator one cannot say. But the fact is that he did assault him.

Immediately he did so the engine stopped. With his usual skill and judgment Major Hemming made a perfectly good landing, and then proceeded to find out what was the matter.

more interesting if it had included, as it perfectly well might have done, such machines as the Firefly and the Avenger and the Hornbill and the Gorcock and the Fox and the Atlas and the Boarhound and the Hyena and the Vespa. It might even have been worth while to enter training machines such as the Sprat and the Vendace, which can put up quite a nice turn of speed.

In fact, one feels that if the Air Ministry encouraged such entries, with the idea of letting the British Public all over the Island see what a limited number saw at the Pageant, and if they allowed the firms who built the machines to have the use of them just for the week or two between the Pageant and the King's Cup Race, the manufacturing firms would regard it rather as a point of honour to compete for the King's Cup Race. One cannot believe that the Air Ministry would put any difficulties in the way if the idea were put to them properly by the influential members of the Royal Aero Club.

In this way real progress would be shown and we should be spared having to watch a procession of antiquities as we have done in all previous King's Cup Races. And, of course, if somebody entered a genuine antique and it beat the more modern types, that would also be a valuable lesson.

This scheme would cost nobody anything, except the cost of insurance. And it would be a splendid practical test of the capabilities of machines and engines alike.

The machines would have been built already for the Air Ministry and all the Air Ministry would have to do would be to postpone acceptance till after the King's Cup Race.

Or, the machines might be accepted so that they could be flown by R.A.F. personnel at the Pageant, and thereafter they might be loaned to their makers simply on the understanding that the makers would insure them and thus indemnify the R.A.F. against loss in case of a crash. The actual risk of flying them round the course would be no greater than the risk of flying the same machines from one aerodrome to another in the course of ordinary R.A.F. work. Consequently nobody would be a penny the worse and a great many people would be many pounds the better.

One presents the idea to the Aero Club in the hopes that something may be done about it.—C. G. G.

What he discovered was that in throwing up his arm to bear his passenger his coat-sleeve had knocked up his engine switch, and he had stopped the engine himself. All he had to do was to switch on, re-start the engine and go ahead. And all that happened was that he arrived at Sealand five minutes late.

Now that same incident might equally well have occurred in the middle of the Irish Channel, the more so because the machines were flying at about 2,000 feet in bright sunlight over the top of a 500-foot sea fog, which would have a distinctly soporific effect on the eyes. If any of the machine had come down into that fog they would have had very little chance of being picked up.

Thanks to the existence of the Irish Free State, there is apparently only one mail boat in each direction between Ireland and England in these days, whereas when Ireland was really a free country as part of the English nation there were two mail boats in each direction as well as two North Wall boats. So there was just four times as much traffic along the direct route from Holyhead.

Apart from the mail boats there is very little traffic along that line. The Liverpool-Dublin boats run on a course to the North of it and the up-and-down Channel boats keep close to the coast. The middle of the Channel is almost deserted. And in any case the chance of being seen in a fog is very remote.

Of course, when an undertaking of that kind succeeds it is a success. But one is perfectly sure that in this case the success was not worth the risk.

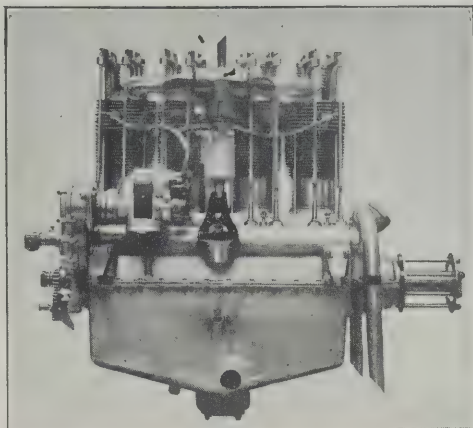
The machines and engines got very little publicity in England from the performance. And the pilots themselves certainly did not need any. There was no object in getting publicity in Ireland, because under a native Irish Government nobody in Ireland is ever likely to have enough money to buy private aeroplanes. So the only people to be impressed were the Irish Free State Army Air Corps, which has already been so impressed that the Moths had been bought before they started for Ireland.

One is told that the Free State Army Air Corps is a very efficient little affair. That seems highly probable. The name of its Colonel is Russell, and there was never a Russell yet who did not originate either from the North of Ireland or from Scotland, since Russell of Balliol (otherwise Urs de Bailleul) migrated from Flanders to Scotland and helped to found the Norman-Scottish aristocracy.

And the officer commanding the Squadron at Baldonnel, Commandant FitzMaurice, who is obviously of good old Norman descent. So the Free State Air Corps is under thoroughly effective Nordic control, despite its having

A.D.C. Successors

KING'S CUP



1st D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. H. S. Broad.

4th D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. F. G. M. Sparks.

5th D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. W. J. McDonough.

All the above machines were fitted with standard 'CIRRUS' Mark I Engines, which ran faultlessly at full throttle throughout a period of over sixteen hours and a course of 1,464 miles.



3rd MARTINSYDE A.D.C.1.—

385 h.p. Siddeley 'Jaguar.'

This machine, piloted by
Sq.-Ldr H. W. G. Jones, won
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IN THE EARLY DAYS.—Mr. Robert Blackburn in his experimental monoplane at Filey.

originated among a crowd of rebels whose rebellion only succeeded because the English Government of the time was too weak-minded to crush it. It is therefore bound to be very different from what it would be if it were run by Southern Irishmen of Mediterranean origin.

The day after the Moths arrived Mr. Tim Healey, late Irish agitator at Westminster and now Governor-General of Ireland, gave a party at the Viceregal Lodge (Shades of the Red Earl Spencer and Their Lordships of Zetland and Dudley!). The four Moths, flown by pilots of the Free State Army gave quite a pretty exhibition of formation flying over the Phoenix Park. Which doubtless impressed the Irish quite as much as did the newspaper accounts of their voyage from England.

Therefore one does not think that the risk of that cross-Channel flight was justified. Colonel Sempill's brain is of very high value to the British Empire. Mr. Broad is worth a great deal as a test pilot. Mr. Courtney, apart from being a test pilot, is a critic and a humorist who cannot be replaced. Mr. Tymms is one of our leading authorities on air navigation. And Major Hemming is the active factor in the Aircraft Operating Co., which has done work of incalculable value in developing air survey and air services all over the World. Between them they are worth more to the British Empire than is the whole of the South of Ireland put together.

Anyhow, the Irish Free State is to be congratulated on having good men at the head of its Air Corps who have shown their judgment in securing what is to-day undoubtedly the most economical training machine in the World and one of the best possible flying machines.—C. G. G.

THE BANQUET TO SIR FRANCIS McCLEAN.

The Royal Aero Club will give a banquet to Lieut.-Col. Sir Francis McClean, to celebrate the honour of Knighthood recently conferred upon him by His Majesty the King.

Any friends, whether members of the Royal Aero Club or not, may attend.

The banquet will be held at the Savoy Hotel, on Tuesday, July 27, at 7.30 for 8 o'clock. The price of tickets is £1 1s. each.

At this banquet the King's Cup will be presented to Sir Charles Wakefield and the additional prizes to the various winners

SOME MORE ABOUT OUR PIONEERS.

A reader of THE AEROPLANE writes to point out that a statement which appeared in the Fifteenth Birthday Issue of THE AEROPLANE is apt to mislead although it is accurate.

On page 636, referring to the First Aero Show, early in 1909, one said: "The only people in England who had got off the ground at that time were Mr. A. V. Roe and the late Mr. S. F. Cody, both of whom had done some short hops in 1908." What one actually meant was that the only people "who had got off the ground in England" at that time were Mr. A. V. Roe and the late Mr. S. F. Cody.

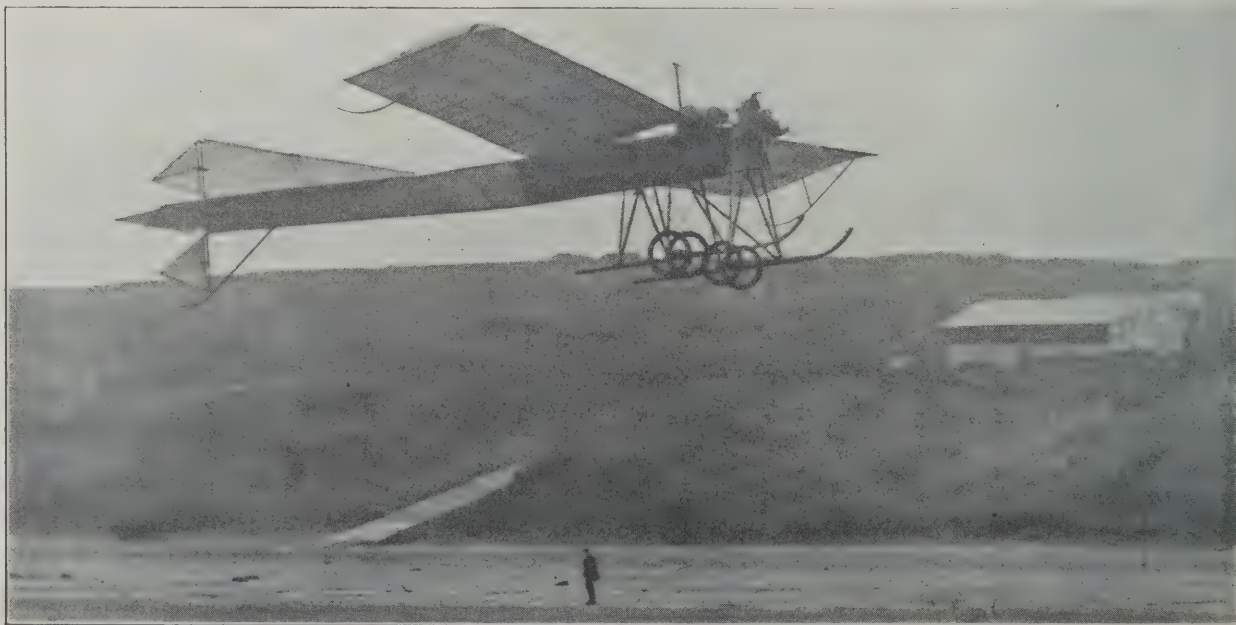
The correspondent in question reminds one that though these two were the only people who had got off the ground in England, there was in England at that time one J. T. C. Moore-Brabazon, who had spent most of 1908 learning to fly on a Voisin machine at Issy-les-Moulineaux and Chalons, his hops varying in length from fifty yards to as much as a mile and a-half.

At that first Aerc Show in 1909 the only machine that had ever done what might be called a sustained flight was Mr. Moore-Brabazon's Voisin which was named "The Bird of Passage." Mr. Moore-Brabazon took the machine down to Leysdown after the show and did several more hops and one very complete crash, after which he repaired it and sold it to the late Cecil Grace, who flew it quite considerably. In the meantime Mr. Moore-Brabazon was having built by the Short Brothers a machine on which he later won *The Daily Mail* £1,000 Prize for the first circular mile flown on an all-British machine.

One is reminded by another correspondent that in those very earliest days Mr. Robert Blackburn, who was studying in Paris at the time, began to take a keen interest in flying, and somewhere about 1909 started to build a monoplane of his own.

One has been fortunate in securing photographs of this very earliest Blackburn machine, which are reproduced herewith. It was built at Leeds and experiments were made with it on the sands at Filey, where it is seen in the photograph.

After experimenting with it Mr. Blackburn built a big monoplane of a type which was ultimately developed into quite a good flying machine. Two of them started in the Circuit of Britain in 1911. One, flown by Mr. Conway Jenkins, turned over at the start because the pilot had unfortunately crossed his wing-warping control-wires by accident



REAL SUCCESS.—The Blackburn monoplane of 1911 flying at Filey.

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ROLLS-ROYCE
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- FOUR YEARS AGO Rolls-Royce Aero Engines in a Fairey Seaplane flew across the SOUTH ATLANTIC (3,800 miles).
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- TWO YEARS AGO A Rolls-Royce Aero Engine in a Fokker Aeroplane flew from HOLLAND to the EAST INDIES (10,000 miles).
- ONE YEAR AGO A Rolls-Royce Aero Engine in a Handley-Page Aeroplane flew from BRUSSELS to the BELGIAN CONGO (5,084 miles).

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C.P.

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before the start, and the other one, piloted by the late B. C. Hucks, made quite a good show.

On that machine later in 1911 Mr. Hucks made a tour of the West of England, giving exhibitions of flying, and infected thousands of people with their first appreciation of flying. That tour was remarkable for the fact that Mr. Hucks kept all his engagements absolutely punctually in spite of weather and all other obstacles.

Yet another correspondent complains that in the history of the Avro firm not enough attention was given to the pioneer work done by Mr. Humphrey Roe. The note on the Avro firm indicated that, as the owner of Everard and Co., of Manchester, Mr. H. V. Roe financed Mr. A. V. Roe's early experiments. But the space available for each of these various histories did not permit the full extent of Mr. H. V. Roe's work to be mentioned.

Mr. H. V. Roe became proprietor of Everard and Co. in 1902 after he had retired from the Army, having been an officer in the Manchester Regiment in the Boer War and having been through the siege of Ladysmith. Mr. John Lord joined the firm three or four years later as manager.

When A. V. Roe and Co. was formed in 1910, Mr. H. V. Roe took charge of all the finance, organisation and policy, and during the next three years he sank about £10,000 in the business. And by the end of that year, thanks to orders for the little 50 h.p. Gnome-engined Avros, the firm paid a dividend.

One well remembers Mr. H. V. Roe taking a very practical part in the firm's business in 1912. And at the Military trials of that year, in which the firm was represented by the first totally-enclosed passenger-carrying machine built in this country, Mr. H. V. Roe, who used the machine more or less as an office, achieved the distinction, one believes, of being the first person ever to type a letter in the air.

On the outbreak of war in 1914, Mr. H. V. Roe volunteered for active service, but was told by the Government to look after the Avro business. When the firm had reached large proportions and the Groves family, the well-known brewers, of Manchester, had come into the firm, various financial alterations took place and Mr. H. V. Roe then sold his interest in the firm and joined the Royal Flying Corps. He served as an observer with the Independent Force, R.A.F., in the East of France and was crashed when night bombing in the Vosges and severely injured.

Truly the way of the pioneer is hard. But one doubts whether it is as hard as is the way of the editor who tries to deal with ancient history and is then assailed for his sins of omission by the partisans of the pioneers. Anyhow he has the satisfaction of seeing for himself that pioneering, so far as aircraft have been concerned, has been a more paying proposition than is editing.

Of course all the foregoing facts, and a lot more, would have appeared in the Fifteenth Birthday Issue of THE AEROPLANE if the amount of space available for ancient history had not been limited by the number of pages of advertisements which it was possible to extract from an orderless, if perfectly orderly, Aircraft Industry.—C. G. C.

BRISTOLS IN AUSTRALIA.

The following paragraphs are taken from a letter dated June 12, 1926, received from Major Brearley, the Managing Director of Western Australian Airways. The machines to which he refers are Bristol Three-Seater Tourers which were shipped to Western Australia in 1921, so they have already had five years' service under the most trying conditions of climate and operation.

The total hours flown by these machines is approximately 6,458, covering 484,320 miles.

The requirements of the Federal Government contract have been such that spectacular hours per machine are not attained, as relays of machines are of necessity kept at out-back stations to carry on the service each week without spending a great deal of time in the air, although individual machines have at certain times put up remarkable performances in covering close on 1,000 miles in one day for several days in succession, and, of course, have given practically no trouble whatever.

We have no hesitation in saying that the Bristol aeroplanes which you supplied to us were very largely responsible for the successful running of this service during its early years when faced with very serious problems regarding lack of transport and facilities for giving normal attention to the machines, as we are operating up to 1,500 miles away from our main base and over a comparatively isolated coastline, calling at ports which are infrequently visited by steamer services.

The success that has been accomplished by these Bristol machines in our opinion was made possible by the very high standard of workmanship and materials employed, for which your Works are absolutely responsible, coupled, of course, with the highly successful machine design which has proved, in spite of its age, to still retain features which are a decided asset to our operations.

The number of passengers in these machines exceeds 3,000, while the mail matter has grown from infinitesimal figures in the early stages, to an average of over 20,000 letters per month, each bearing stamps to the minimum value of 4d.

The total letters carried in these machines is approximately 406,390.

MORE CORRECTIONS.

Most newspapers are inaccurate, but one hopes that THE AEROPLANE is a little more accurate than most of them. Nevertheless errors will happen in the best regulated newspapers and THE AEROPLANE has at any rate the grace to acknowledge its mistakes.

Owing to bad manuscript it was stated in the description of the Bristol Jupiter Mark VI engine, published on July 14, that "Iron packing pieces are fitted over the studs holding the (cylinder) heads . . . thus preventing distortion due to differential expansion . . ."

The word Iron was originally and should have remained Invar. As the error did occur it may be well to explain that Invar is the trade description of a specific alloy of nickel and iron which has a zero or a negligibly small rate of expansion with change in temperature, and that this alloy is extensively used for the manufacture of parts of mechanism in which change of dimension with change of temperature must be avoided.

Mr. Hubert Broad, reading THE AEROPLANE, as usual, last week, discovered that one had credited him with having done those particularly notable flights on D.H.9s from London to Helsingfors and back and from London to Malta and back. As Mr. Broad is the last person in the World to wish to acquire merit at the expense of other people, one has much pleasure in stating that both these trips were done by Mr. C. D. Barnard of the de Havilland Company.

Mr. Charles Barnard has done an immense amount of hard flying during the last few years and of late has been particularly busy as instructor at the de Havilland School and as a test pilot. The fact that he has been for so long a prominent member of the de Havilland staff shows the high esteem in which his capabilities as a pilot are held by the directors of the firm. And these long-distance flights show that he is quite in the front rank of what one may call navigating pilots, as distinct from pilots who, however skilful, confine their activities to test flying and school work.

Another inaccuracy has occurred in connection with the Hawker Horsley. Mr. W. S. Carter states, in the interests of historical accuracy, that the Horsley was constructed to his design and moreover that the first Hawker Horsley had done its flight tests before he left the Hawker firm.

The Hawker Hornbill, which was built to Air Ministry specification in order to test the possibilities of the direct-drive Rolls-Royce Condor engine in a single-seat fighter, was also produced to Mr. Carter's designs.

Mr. Carter is now co-operating with Lieut.-Col. Bristow and is designing a speed machine to the order of the Air Ministry, which machine is being built by Short Bros.

At least that was so recently. One is not prepared to guarantee the accuracy of any statement in connection with Aviation in these days of rapid aeronautical movements. For all one knows the machine may have been built and type-tested and crashed by now.

Yet another correction concerns the comic Impromptu Handicap at Hendon on the Saturday of the King's Cup Race. According to the Royal Aero Club, Mr. Lingham, on one of the smoke-writing S.E.s., beat Mr. F. L. Barnard, on another smoke-writing S.E., for the first place in the second heat of the race and took third place in the final heat. Evidently somebody connected with the R.Ae.C. made a mistake as to which of the S.E.s. was which, for one now learns that Mr. Barnard and Mr. Lingham practically dead-heated in the second heat and Mr. Barnard was well in front of Mr. Lingham for third place in the final. Thank Heaven the mistake is this time the Aero Club's and not THE AEROPLANE'S.

Which reminds one of the story of the Judge who corrected a barrister on a point of Law. To which correction the barrister replied,—"I bow to your Lordship's ruling. Your Lordship is right and I am wrong, as your Lordship usually is.—C. G. C.

AVIATION IN THE WEST INDIES.

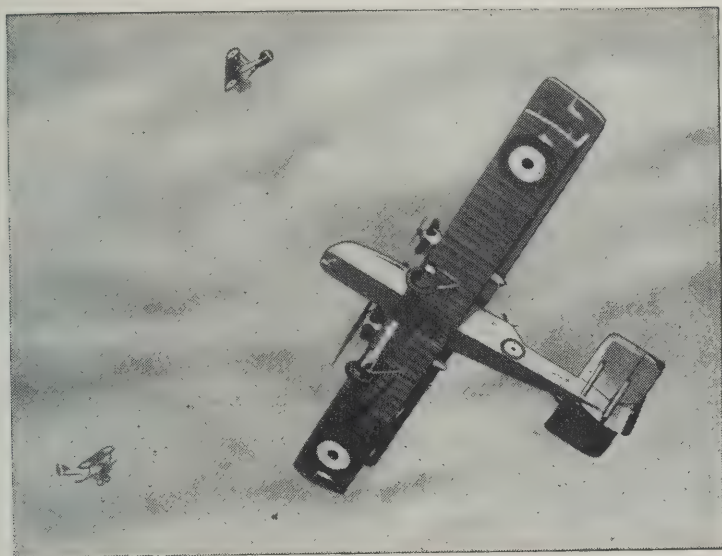
The Jamaica correspondent of *The Times*, in the issue of July 14, states:—

Governors of the West Indian Colonies have been invited by the Secretary of State for the Colonies to furnish him with reports on the possibilities of civil aviation in the British West Indies.

The Governor of Jamaica has already appointed a committee to investigate and report on the subject as it affects the island. It is stated that, if civil aviation develops in the Caribbean, Port Royal will become an air base.

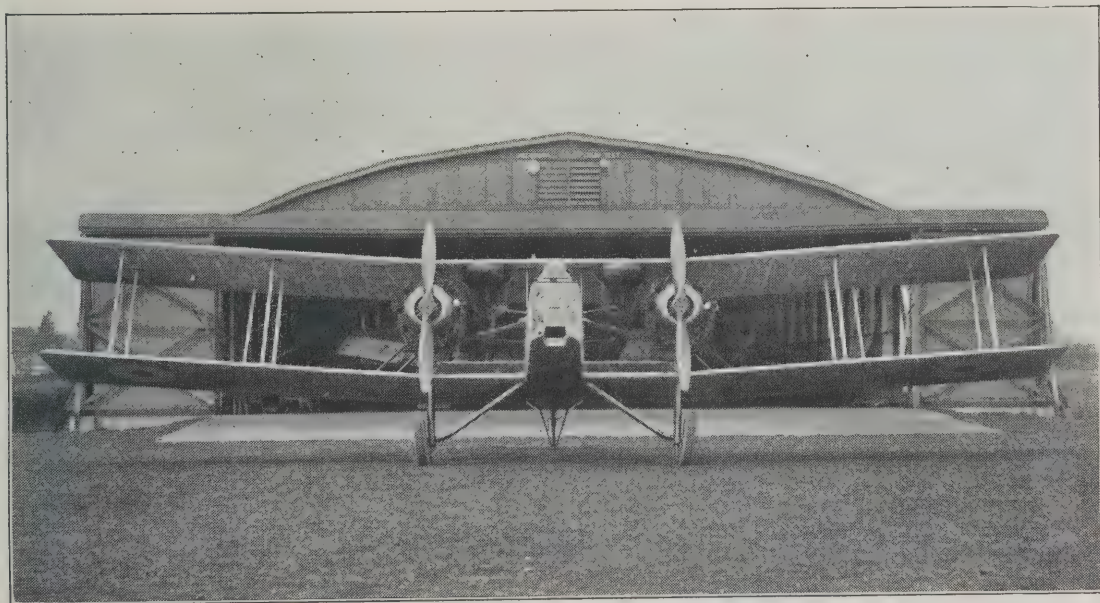
AN OPPORTUNITY.

There is a vacancy in the London district for a first-class engineer-mechanic with an intimate knowledge of the various types of Rolls-Royce engines. He must be able to take down, repair and rebuild engines as well as to inspect work done by others. Applicants are invited to write to the Editor of THE AEROPLANE in the first instance.



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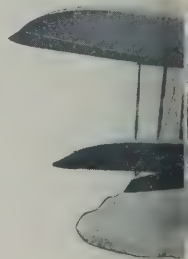
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that we have got
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GLOSTER "GAMECOCK,"
with Jupiter engine.



fitted with

KINDLY MENTION "THE AEROPLANE"

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WORTH WORKS AND
AERODROME.

OXFORD STREET, W

FIGHTERS.

NOT.
monstrate a few
Firstly it showed
single-seat fighters
in the World."
e, July 7th, 1926.

At
ROYAL AIR FORCE
DISPLAY.

After considering all the latest types—some of which will no doubt be adopted by the Air Force—I confess to being unshaken in my view that the Gloster Gamecock, with which No. 23 Squadron which took part in the "Group Evolutions" is equipped, is as "eyeable" a machine for service use as I have yet seen. It was interesting to notice that in the Boarhound, Captain Barnwell has adopted the Gamecock's feature of having the pilot's machine-guns recessed in grooves on each side of the engine cowling—a very neat feature.

"Sheffield Telegraph," July 7th.
Extract from article by Lieut.-
Col. W. Lockwood Marsh.



GLOSTER "GORCOCK,"
with Napier Lion engine.

or engine.

RESPONDING WITH ADVERTISERS.

THE GERMAN SEAPLANE COMPETITION.

The German seaplane competition, which began on July 11 and will continue till July 29, is intended to encourage the production of commercially-efficient mail-carrying seaplanes.

Competing machines were assembled at Warnemünde on Sunday, July 11. July 12 to 23 will be occupied in various eliminating tests of a technical nature to secure that the machines comply in performance and so forth with the requirements laid down. July 24 to 27 will be devoted to reliability trials, and on July 29 a seaworthiness test concludes the proceedings.

The first test is of the climbing time with full load from 1,000 to 2,000 metres. This must not exceed 15 minutes, and if on the first attempt a longer period than 15 minutes is taken, the load must be reduced until this climb rate is achieved. Only the load that can be carried at this climb rate will be credited to the machine in the competition.

The next test is of commercial radius of action carrying 400 kg. of useful load. This will be calculated from the fuel consumption flying at the total load fixed by the climb test over a distance of 250 km.

Maximum speed will be measured over a quadrangular course of 100 km., and the getting-off speed by the photographic methods developed by Amsterdam aerodynamic laboratory, in which a cinematograph film of the aeroplane taken from behind upon which the image of a stop-watch also appears gives simultaneous measures directly of time and—by measurement of the image of the aeroplane—of distance covered in that time.

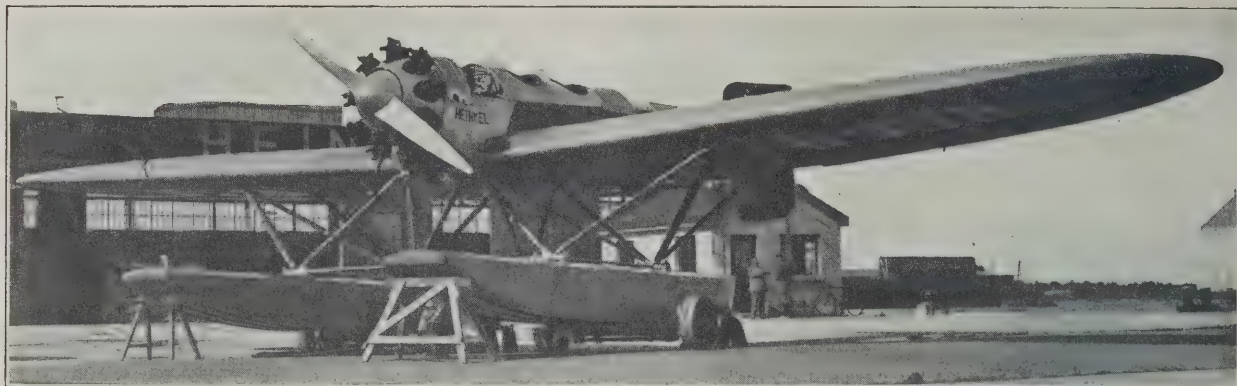
The actual flying tests between July 24 and 27 are to be made along the German coast and across the Kiel Canal, covering in total the range from Borkum to Memel. An average of about 1,000 km. (620 miles) is to be covered on each day with four or five intermediate landings.

Prizes are to be awarded in accordance with a series of

formulae, the precise meaning of which it has not yet been possible to discover.

The following list gives the entries for the competition:—

- (1) L.F.G. V.59 (230/300 h.p. B.M.W.IV); pilot, Fischer.
- (2) L.F.G. V.60 (230/300 h.p. B.M.W.IV); pilot, Haase.
- (3) L.F.G. V.61 (420 h.p. Bristol Jupiter IV); pilot, Von Reppert.
- (4) Caspar C.29 (400 h.p. Hispano-Suiza); pilots, Berthold and Sido.
- (5) Rohrbach Ro. VII Robbe (Two 230/300 h.p. B.M.W.IV); pilot, Landmann.
- (6) Rohrbach Ro. VII Robbe (Two 230/300 h.p. B.M.W.IV); pilot, Roth.
- (7) Junkers W.33 (230/310 h.p. Junkers L.5); pilots, Langanke, Thiedemann and Tacke.
- (8) Junkers W.34 (425/530 h.p. Bristol Jupiter VI); pilots, Frantz and Zimmermann.
- (9) Heinkel H.E.5 (450 h.p. Napier Lion); pilot, Von Gronau.
- (10) Heinkel H.E.5 (420 h.p. Gnôme-Rhône Jupiter); pilot, Von Dewitz.
- (11) Heinkel H.D.24 (230/300 h.p. B.M.W.IV); pilot, Spiess.
- (12) Heinkel H.D.24 (230/300 h.p. B.M.W.IV); pilot, Geisler.
- (13) Gerbrecht W.3 (three 110 h.p. Thulin); pilot, Schüler.
- (14) Dornier Doe (420 h.p. Bristol Jupiter IV); pilot, Coeler.
- (15) Dornier Doe (420 h.p. Bristol Jupiter IV); pilot, Wagner.
- (16) Junkers A.20 (230/310 h.p. Junkers L.5); pilots, Friedensburg and Hagen.
- (17) Heinkel S.1 (360 h.p. Rolls-Royce Eagle IX); pilots, Starke and Kessel.



THE HEINKEL H.E.5.

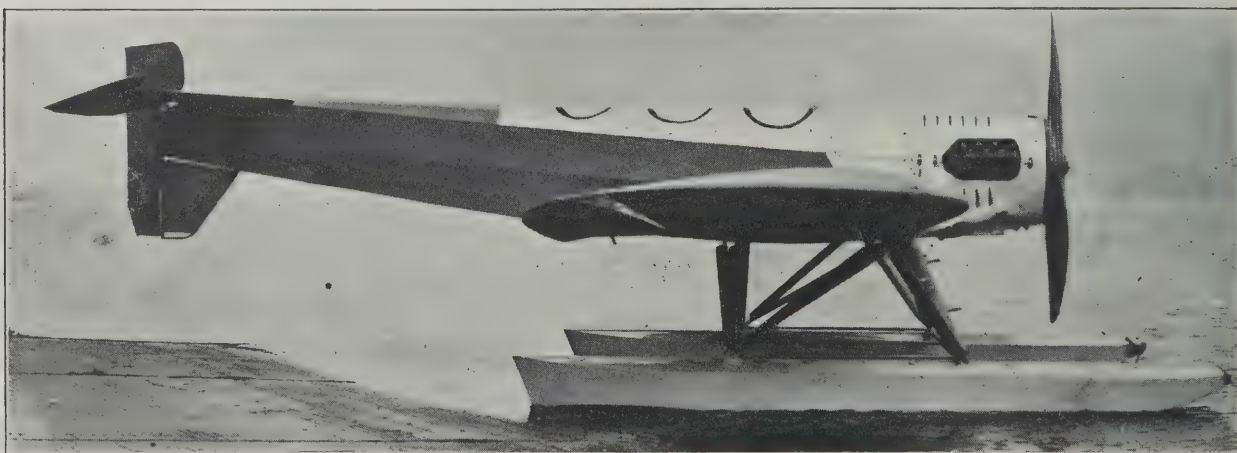
A low-wing monoplane, steel tube fuselage, wooden wings with box spars and spruce and three-ply ribs. Engine carried on mountings removable by undoing four bolts, arranged so that any standard type engine of 350/600 h.p. may be fitted.

Steel tube chassis with balsa-wood fairings. Roomy cabin behind pilot which can be arranged either for passengers and luggage or used for goods alone. Fuel tanks in wing and pump-feed to carburettor. Floats easily detachable.

Competition machines fitted with 420 h.p. Gnôme-Rhône Jupiter and 450 h.p. Napier Lion Series 5.

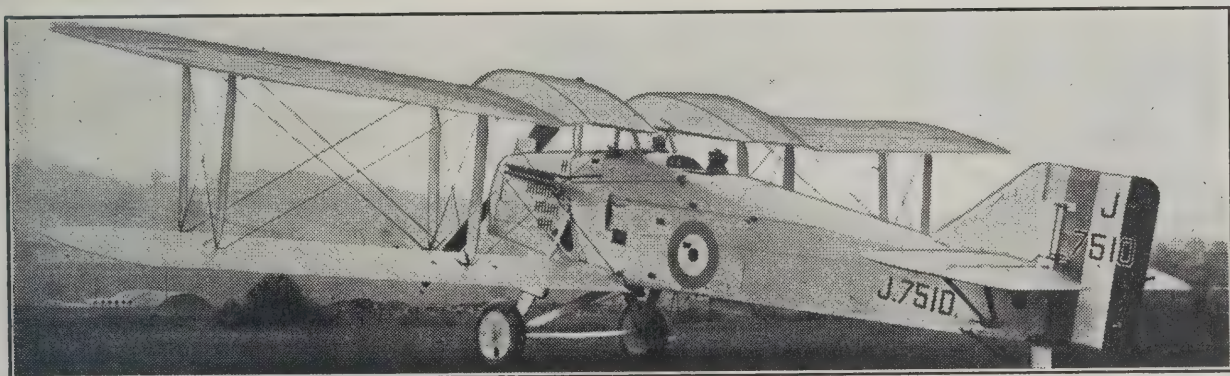
Following are the specifications:—

| | Napier. | Jupiter. |
|-------------------------------|---|--|
| Weight empty. | 1,640 kg. (3,620 lbs.) | 1,500 kg. (3,306 lbs.) |
| Weight loaded. | 2,500 kg. (5,510 lbs.) | 1,920 kg. (4,210 lbs.) |
| Wing loading. | 51.1 kg./m ² . (10.4 lbs./sq. ft.) | 39.3 kg./m ² . (8 lbs./sq. ft.) |
| Power loading. | 5.27 kg. (11.6 lbs.) h.p. | 4.28 kg. (9.5 lbs.) h.p. |
| Maximum speed. | 207 km/h. (132 m.p.h.) | 200 km./h. (122 m.p.h.) |
| Climb to 1,000 m. (3,280 ft.) | 3.6 mins. | 2.6 mins. |



THE HEINKEL MONOPLANES.—Above with the Jupiter, below with the Napier.

WESTLAND



THE photograph is of the Yeovil Day Bomber, one of the latest machines built at the Westland Aircraft Works. It marks an important stage in the development of this type of aircraft possessing among its other features of superiority a good view for pilot and observer in all directions, stability (for accurate bombing), gravity feed of petrol from tanks in upper plane, and oleo-rubber undercarriage with wide track. It has a Rolls-Royce Condor Engine of 670 h.p. with Leitner-Watts metal propeller. The performance of the machine which was built for the Air Ministry is highly satisfactory.

At the Westland Aircraft Works, machines of all types have been designed and constructed for the British Government and for industrial purposes.

The personnel of these Works includes an expert staff which is available to consider specifications for aircraft required by Foreign and Dominion Governments or private customers. A fully equipped 4 foot wind channel is available for model experiments.

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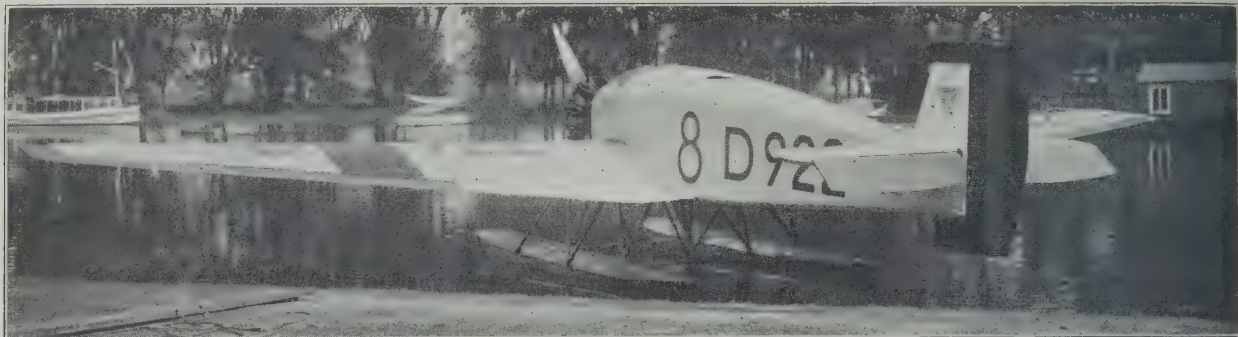
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE JUNKERS W.33 and W.34.

For the seaplane competition which is now in progress on the Baltic coast of Germany, the Junkers Werke Dessau have built two seaplanes which differ mainly in the use of different engines.

These machines are known as the W.33 and W.34, and are fitted with a Junkers L.5 engine of 310 h.p. and a Gnome-Rhône Jupiter of 420 h.p. respectively. Both machines are of standard Junkers construction and type, and are of the same over-all dimensions.

They have cockpit accommodation for two pilots side by side, followed by a large mail or freight compartment, entered from a large side-door and communicating with the pilots' cockpit.

A very full equipment of navigational instruments is fitted including a turn-indicator and a complete wireless equipment, including direction-finder, in order that over-sea navigation may be carried out in bad weather, and special attention has been given to the problems of seaworthiness generally.

The following are their specifications:—

| | W.33 | W.34. |
|-----------------|---|---|
| Span. | 18.35 m. (62 ft.) | |
| Length. | 10.9 m. (36 ft. 10 in.) | |
| Wing area. | 43 sq. m. (505 sq. ft.) | |
| Engine. | Junkers L.5, 310 h.p. | Gnome-Rhône Jupiter, 420 h.p. |
| Weight empty. | 1,383 kg (3,065 lbs.) | 1,350 kg. (2,980 lbs.) |
| Weight loaded. | 2,100 kg. (4,630 lbs.) | 2,100 kg. (4,630 lbs.) |
| Wing loading. | 49 kg./m ² . (9.26 lbs./sq. ft.) | 49 kg./m ² . (9.26 lbs./sq. ft.) |
| Power loading. | 6.8 kg. (15 lbs.) h.p. | 4.5 kg. (10 lbs.) h.p. |
| Max. speed. | 185 km./h. (115 m.p.h.) | 205 km./h. (127 m.p.h.) |
| Cruising speed. | 150 km./h. (93 m.p.h.) | 160 km./h. (100 m.p.h.) |



THE TWO JUNKERS SEAPLANES.—Above with the Jupiter engine, below with the Junkers.

THE CASPAR C.29.

A single-bay biplane with heavily-staggered wings and a fuselage which in side elevation has the form of a wing section. Timber construction generally, except wing and chassis struts, which are steel tube. Fitted with 12-cylinder 400 h.p. Hispano-Suiza engine.

The specification is as follows:—

| | | | |
|---------------------|-------------------------|-------------------------------|--|
| Span ... | 13.0 m. (42 ft. 8 in.) | Wing loading | 41 kg./m ² . (8.5 lbs./sq. ft.) |
| Length ... | 9.98 m. (32 ft. 2 in.) | Power loading ... | 4.9 kg./h.p. (10.7 lbs./h.p.) |
| Height ... | 4.1 m. (13 ft. 5 in.) | Max. speed | 200 km./h. 124 m.p.h. |
| Wing area | 47 sq. m. (505 sq. ft.) | Climb to 1,000 m. (3,280 ft.) | 4 mins. |
| Weight loaded | 1,950 kg. (4,300 lbs.) | | |





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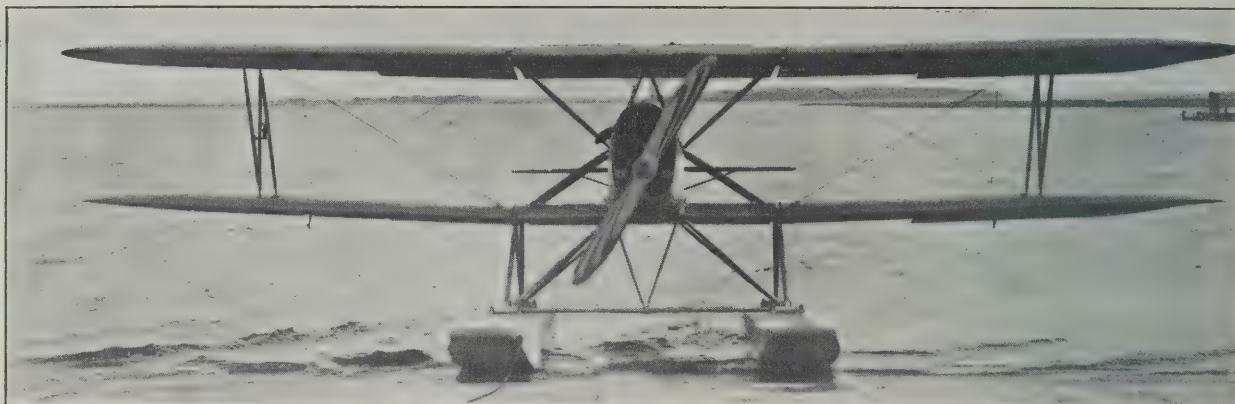
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE HEINKEL H.D.24.

A single-bay biplane with thick wings and a very robust undercarriage. Steel tube fuselage, easily detached engine mounting, gravity feed from petrol tanks in the top wing. Wings of timber with steel tube drag struts. Floats as on the Heinkel H.E.5, illustrated on page 104.

Engine 230/300 h.p. B.M.W.IV.
The specification is as follows:—

| | | | |
|---------------------|---|-------------------|-----------------------------------|
| Wing area | 50 sq.m. (535 sq. ft.) | Power loading... | 7.85 kg./h.p. (17.6 lbs./h.p.) |
| Weight empty | 1,350 kg. (2,975 lbs.) | Max. speed | 160 km./h. (99 m.p.h.) |
| Weight loaded | 1,960 kg. (4,320 lbs.) | Climb to 1,000 m. | (3,280 ft.) 8 mins. |
| Wing loading ... | 39.2 kg./m ² . (7.9 lbs./sq. ft.) | | |

STILL ANOTHER DISTANCE RECORD.

On July 14, Capt. Girier and Lient. Dordilly left Le Bourget at dawn on a Breguet XIX biplane (500 h.p. Hispano-Suiza engine) in an attempt to beat the World's-Record for distance covered in a straight line. The existing record was put up on June 26-27 by Capt. Arrachart and his brother, who flew from Paris to Basra.

On July 15 Capt. Girier and Lient. Dordilly landed at Omsk in Siberia owing to very bad weather after having covered 2,940 miles in 29 hours. This flight beats that accomplished by the Arrachart brothers by over 200 miles.

A HIGH-SPEED CIRCUIT.

On July 10, Lient. de Vitrolles and Sergt.-Major Bernard left Le Bourget on a Breguet XIX biplane (400 h.p. Lorraine-

Dietrich engine) at 04.30 hours, and flying via Gothenburg, Oslo, Stockholm, Copenhagen and Brussels, arrived back at Le Bourget at 11.30 hours on July 13, after having covered the 3,450 kms. in 30 hours' flying time.

A SPANISH FATAL ACCIDENT.

Lient. Duran, of the Spanish Navy, and one of the crew of the "Plus Ultra" that flew from Palos de Moguer to Buenos Aires, was killed on July 19 near Barcelona.

The seaplane flown by Lient. Duran collided with another machine and fell into the sea from 300 feet.

Lient. Munaz dived to the rescue of Lient. Duran from an airship from a height of 150 feet (so reported), and got Lient. Duran free from the wreckage, but the latter, who was seriously injured, died on board the destroyer *Alfredo* a few moments after being taken on board.



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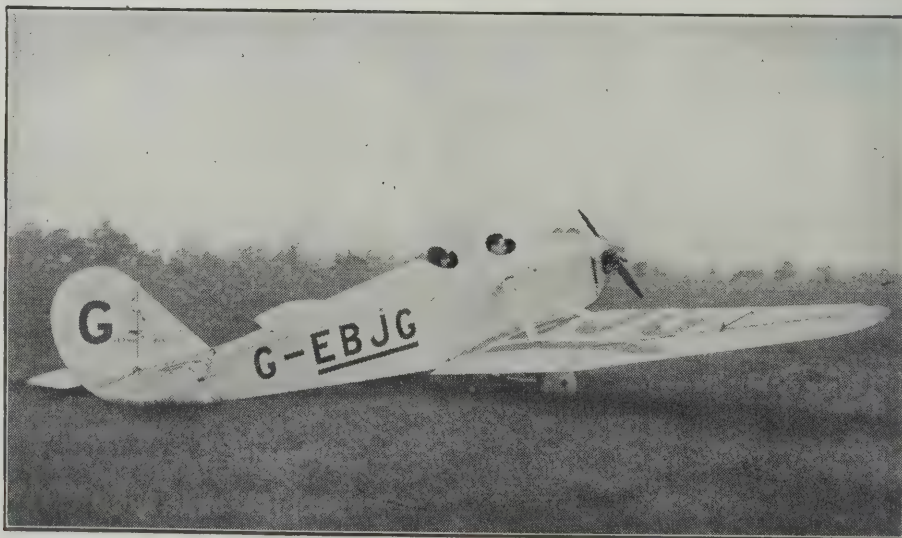
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The de Havilland "Moth" has been selected by the Irish Government for the training of Officers and Cadets of the Free State Air Force.

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The illustration below depicts a batch of Moths at Stag Lane Aerodrome ready for delivery by air to Ireland.

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ON A
DE HAVILLAND
MOTH
AT A SPEED OF
90.4 M.P.H.

THE DE HAVILLAND "MOTH"
TWO-SEATER LIGHT AEROPLANE.

Four Cylinder Air Cooled Engine
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Dual Control.

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RANGE: 3½ Hours.

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AEROBATIC CERTIFICATE
OF AIRWORTHINESS.



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

July 13.

GENERAL DUTIES BRANCH.—Flg. Off. R. R. Greenlaw is granted a perm. comm. in this rank (June 1); R. G. Hart, M.C., is granted a S.S. comm. as a Flg. Off., with effect from and with seniority of, July 2; Sq. Ldr. C. S. Wynne-Eyton, D.S.O., is placed on the retired list at his own request (June 25); Flt. Lt. I. M. Matheson is transferred to the Reserve, Class A (July 14); Flg. Off. L. R. Shaw resigns his S.S. comm. (July 11).

ACCOUNTANT BRANCH.—Flg. Off. N. E. D. Hutchinson is transferred to the Reserve, Class C (July 10).

MEDICAL BRANCH.—Flg. Off. J. D'I. Rear ceases to be seconded to the Royal Sea Bathing Hospital, Margate (July 1).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. on probation in the General Duties Branch in the ranks stated:—CLASS A.—Flg. Offs.—S. Turner, D.F.C., S. F. Woods (July 13).

CLASS AA.—Plt. Off.—T. J. Tingley (June 29). The following are confirmed in rank:—Plt. Off. S. W. White (June 16); Plt. Off. R. N. Bullock (June 17); Flg. Off. T. Buchanan (July 12).

The following Flg. Offs. are transferred from Class A to Class C:—H. E. W. Macandrew (Apr. 20); W. H. Statham (May 8); S. A. Dismore (May 15); D. B. C. Fulton (June 19); G. W. Dean (June 25); C. McL. Reid (July 4).

Flt. Lt. H. O. Barnaby, M.B.E., is transferred from Class B to Class C (June 14); Flg. Off. R. G. Hart, M.C., resigns his comm. (July 2).

The following Flg. Offs. relinquish their comms. on completion of service (May 22):—H. W. Frith, W. F. A. Snell.

Appointments.

Week ending July 20.

GENERAL DUTIES BRANCH.—Flight Lieutenants C. R. Carr, D.F.C., to H.Q., Air Defence of Great Britain, Uxbridge, 10/7. H. E. Seanson, D.F.C., to School of Photography, Sth. Farnborough, 5/7. G. C. Bladon, to No. 442 Flight, Leuchars, 31/5. T. Humble, to No. 4 Sqn., Sth. Farnborough, 6/7. W. E. Reason, to No. 1 S. of T.T. (Apprentices), Halton, 6/7. W. F. Dickson, D.S.O., A.F.C., to No. 56 Sqn., Biggin Hill, 19/7. P. H. Mackworth, D.F.C., to R.A.F. Cadet College, Cranwell, 6/7. E. J. L. Hope, A.F.C., to R.A.F. Base, Gosport, 6/7. L. E. M. Gillman, to H.Q., Air Defence of Great Britain, Uxbridge, 6/7.

Flying Officers A. A. Jones, to No. 4 Apprentices' Wing, Cranwell, 6/7. W. L. Payne, to Marine Aircraft Experimental Establishment, Felixstowe, 6/7. W. E. Cowan, to No. 32 Sqn., Kenley, 21/7. F. R. Offord, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 11/5.

Pilot Officers J. R. Addams, to remain at No. 43 Sqn., Henlow, instead of to No. 2 F.T.S. as previously notified. F. S. Homersham, D.C.M., M.M., and J. W. Busted, to R.A.F. Depot, Egypt, 1/7. P. G. Tweedie, to No. 216 Sqn., Egypt, 2/7.

MEDICAL BRANCH.—Squadron Leader (Dental) J. G. Worsley, to H.Q., Inland Area, Stanmore, on appt. to Temp. Comm. from Army Dental Corps, 1/7. J. G. Worsley, to R.A.F. Depot, Uxbridge, 5/7.

Flight Lieutenants (Dental) T. K. Place, to No. 5 F.T.S., Sealand, on appt. to Temp. Comm. from Army Dental Corps, 1/7. H. J. Procter, to R.A.F. Depot, Uxbridge, on appt. to Temp. Comm. from Army Dental Corps, 1/7. H. O. Sumerling, to H.Q., Cranwell, on appt. to Temp. Comm. from Army Dental Corps, 1/7.

STORES BRANCH.—Flight Lieutenant J. Lundon, to No. 3 Sqn., Upavon, 19/7.

Flying Officer W. Liniker, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 20/6.

ACCOUNTANT BRANCH.—Flying Officer H. Hedderwick, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/5.

A Flying Accident.

The Air Ministry regrets to announce that as the result of an accident at Cranwell, Sleaford, Lincs., to a Sopwith Snipe on July 15, 1926, Flight Cadet Humphrey Francis Morell Pickford, the pilot and sole occupant of the aircraft, was severely injured and died later in the day.

[Mr. Pickford is the second cadet to be killed at Cranwell since the foundation of the Cadet College. The only other fatal accident there was the collision in which Mr. Vivian Gillmore was killed.—Ed.]

The Service Mediterranean Cruise.

On July 6 the two Supermarine Southampton flying-boats (two 450 h.p. Napier Lion engines each) from the Marine Aircraft Experimental Establishment, R.A.F., Felixstowe, which left Plymouth on July 1, to fly to Egypt and back, arrived at Malta.

On July 9 they arrived at Benghazi (Cyrenaica) and on the following day at Haifa on the outward journey.

On July 12 they left Fumagusta, in Crete, for Haifa on their return journey to England.

On July 13 they arrived at Haifa.

On July 17 they arrived at Aboukir, and on the following day they left at 08.30 hours for Sollum and Athens.

A Halton Mishap.

On July 17 a convoy of a dozen lorries was taking about 300 men and boys back to Halton from Ballinger, where they had been giving a display, when the front lorry ran off the road down the side of a wooded embankment near Great Missenden. The lorry was finally stopped by some trees, and overturned. Almost all of the thirty occupants were slightly injured, but only three had to be taken to hospital, where they are reported to be progressing satisfactorily. The others were attended to by the villagers and Doctor Magrath, the local practitioner of Great Missenden.

Accountant Officers in the R.A.F.

The Air Ministry announces that an examination of candidates for commissions as Accountant Officers will be held in London at the end of September. About ten vacancies will be filled immediately and further appointments may be made at a later date.

Candidates without previous service in the Forces must be between 22 and 26 years of age.

The written examination, for which a fee of £4 is payable, will be conducted by the Civil Service Commissioners. A written examination in Accountancy will also be held and candidates will be interviewed by a Selection Board.

Details may be obtained on application to the Secretary, Air Ministry (S-7), Kingsway, London, W.C.2.

The R.A.F. in Parliament.

THE AIR FORCE LIST.

In the House of Commons on July 13, in reply to a question by Col. Woodcock, Viscount CURZON (for the Secretary of State for Air) said that approximately 2,000 copies of the Air Force List were printed each month. The annual cost of printing the Air Force List was £2,000, and about 675 copies were sold every month.

[This figure for sales is absurdly small and indicates a lamentable lack of interest in the Air Force itself. One would expect at least 1,500 out of the 3,000 officers in the R.A.F. each to have his own copy, apart from the copy in the Orderly Room and in the Mess. And every newspaper ought to keep a copy.—Ed.]

THE GIFT HORSE.

In the House of Commons on July 14, COL. DAY asked the SECRETARY OF STATE FOR AIR the cost of the tea provided in the Parliamentary enclosure at the R.A.F. Display and to what funds the expenses would be charged. SIR SAMUEL HOARE explained that the cost was £40 and the charge was against the receipts of the Display.

[Members who feel that they had too much value on July 3 can always remit conscience money to the R.A.F. Memorial Fund.—Ed.]

AIR MINISTRY PERSONNEL.

In the House of Commons on July 14, in reply to a question by MR. W. HIRST, the SECRETARY OF STATE FOR AIR said that there were no Squadron Leaders, Flight Lieutenants or Flying Officers employed at the Air Ministry on duties of a purely clerical nature requiring no special qualifications. The Air Force Officers at the Air Ministry were employed solely in posts in which Service experience was demanded.

SPIRIT.

In the House of Commons on July 9, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that the number of gallons of petrol used by the R.A.F. at the Display on July 3 was approximately 13,500 gallons.

MR. COBHAM'S FLIGHT TO AUSTRALIA.

On July 13 Mr. Cobham left Basra at about 06.00 hours with Sgt. Ward as mechanic and arrived at Bushire at 08.50.

On July 14 he left Bushire at 06.40 hours and arrived at Bandar Abbas at 09.00 hours. He attempted to continue his journey the following day, but was held up in the morning by an unusually low tide and in the afternoon by a bad thunderstorm and torrential rain.

On July 17 he damaged a strut of his undercarriage in attempting to leave Bandar Abbas.

On July 18 the machine was ready to leave at 03.45 hours. He arrived at Charbar at 07.30, refuelled his machine, and flew straight on to Karachi, arriving there at 11.15 hours, having thus taken four hours to do the 420 miles between Charbar and Karachi and covering 740 miles in the day.

Mr. Cobham expects to leave Karachi on July 20.

On July 14 Mr. C. J. S. Capel, of the Armstrong-Siddeley Co., left for Australia. He is flying to Marseilles, and going to Port Said by steamer, where he will board the Australian Commonwealth steamer, *Jervis Bay*, for Fremantle.

One understands that Mr. Capel is primarily going to Australia to advise or instruct the Royal Australian Air Force in the care and maintenance of certain Jaguar engines recently acquired by the Commonwealth Government. His journey may perhaps have been accelerated so that he can arrive in time to help Sgt. Ward with any work which may be needed on Mr. Cobham's Jaguar before starting the return journey.

Sgt. Ward was trained at Halton and is considered by the senior R.A.F. technical officers at Basra to be an exceptionally capable mechanic. But naturally he has not the intimate knowledge of the Jaguar which the late Mr. Elliott had acquired in his work with Mr. Cobham. Every engine has its own little tricks, and there are just so many dodges for keeping an engine going with the minimum of work and worry. Also there are many special methods in overhauling and examining any engine which save time and trouble. So Mr. Capel's assistance should be very valuable when Mr. Cobham arrives in Australia.

He and Sgt. Ward together should be able to assure, so far as is humanly possible, a successful journey home.

One gathers that there is no question of Mr. Capel replacing Sgt. Ward. He has gone to Australia on his firm's business and will merely be there to help Mr. Cobham's undertaking in any way possible.

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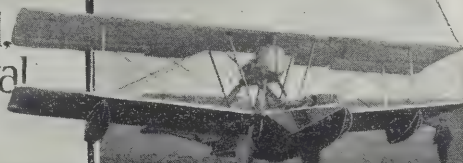


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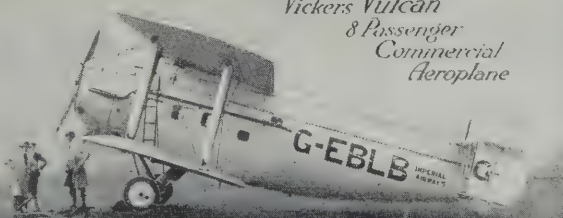
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THE FLYING CLUBS.

The London Aeroplane Club.

Will members kindly note that the Club will close down on Friday, July 30, and re-open on Monday, Aug. 9.

The Flying Display at Roehampton.—On Saturday, July 17, G-EBNY, the new Moth recently presented to the Club by the Duke of Sutherland, was present at Roehampton in charge of Capt. F. G. M. Sparks. Mrs. Lynn and Mr. H. Broad, on D.H. Moths, and Flt. Lt. Ritchie, of the Seven Aeroplane Club, on the D.H.51, were there.

The Yorkshire Pageant.—The London Aeroplane Club is proposing to send two D.H. Moths to represent the Club at the Yorkshire Pageant at Leeds on July 24.

In addition to the Club machines, Mrs. Lynn, Sir John Rhodes and Mr. Kittell will, it is hoped, compete on their own Moths.

Report for week ending July 18.

The total flying for the week was 55 hrs. 25 mins.

The following members received flying instruction:—Miss O'Brien, R. V. Banks, G. Eady, S. H. J. Garne, Air Vice-Marshal Sir Sefton Branner, G. Wallcousins, J. A. Simson, R. G. Edkins, B. B. Tucker, Capt. Portway, T. H. O. Richardson, A. E. Leeding, S. D. Durkan, H. Petre, T. W. Heath, H. F. Wright, W. Hay, E. A. Cook, L. Martin, R. Malcolm, G. C. Bonner, E. A. Lingard, S. O. Bradshaw, A. J. Richardson, G. M. Randall, S. Nesbitt, G. W. Hall, S. W. Russell, F. C. Elford, P. O. A. Davison, O. J. Tapper, H. Solomon, H. R. Thomas, Mr. Hamilton, Lady Douglas Hamilton, P. W. Hoare, H. K. Presland, L. G. Sykes, G. Lyon, S. J. Bassett.

The following members made solo flights:—W. Hay, O. J. Tapper, Major K. M. Beaumont, N. Jones, R. Malcolm, R. C. Presland, Mrs. Elliott-Lynn, Capt. W. Roche-Kelly, A. Lees, A. H. Dalton, G. Wallcousins, N. J. Hulbert, E. S. Brough, Sq. Ldr. M. E. A. Wright, A. R. Ogston, E. E. Stammers, S. O. Bradshaw, G. H. Craig.

Special instruction in navigation was given to G. H. Craig and L. C. J. Mitchell.

The following associate members were given joy-rides:—Mrs. Bailey, D. Usher, Miss Dalton, Miss Oldham.

The Lancashire Aero Club.

Report for week ending July 17.

Machines in use G-EBLV and G-EBMQ. The weather has been good. Mr. Stack gave instruction to:—Messrs. Agar 3 hrs. 5 mins., Hardy 2 hrs. 15 mins., Fallon 2 hrs., Costa 1 hr. 35 mins., Gattrell 1 hr. 35 mins., Leeming 1 hr. 20 mins., Leigh 55 mins., Jenkinson 55 mins., Brown 35 mins., Anderson 30 mins., Gerrard 30 mins., Fray 30 mins., Newton 25 mins., Goodyear 20 mins., Collinson 20 mins., Rodman 15 mins., Barnes 15 mins. Total 17 hrs. 20 mins.

Mr. Cantrill gave instruction to:—Messrs. Leeming 1 hr. 40 mins., Newton 20 mins. Total 2 hrs.

Mr. Scholes gave instruction to:—Messrs. Bert 30 mins., Anderson 30 mins., Lower 25 mins., Leeming 20 mins. Total 1 hr. 45 mins.

Solo flights by Messrs. Wilkinson 2 hrs., Goodyear 1 hr. 10 mins., Michelson 1 hr. 5 mins., Lacayo 45 mins., Goodfellow 35 mins., Leeming 25 mins. Total 6 hrs.

Mr. Lacayo gave D. F. Dyson a joy-ride of 30 mins.

Tests occupied 1 hr. 10 mins.

Total for week 28 hrs. 55 mins.

Dr. Wilkinson made the required flights for his certificate on Tuesday. Cross-country flights to Sealand Aerodrome, Chester, with Mr. Stack were made by Messrs. Agar, Hardy and Leeming on Thursday, Friday and Saturday.

Members are again reminded that the aerodrome will be closed at 4.0 p.m. on July 23 until 2.0 p.m. on July 26.

The Newcastle-upon-Tyne Aero Club Ltd.

Report for week ending July 18.

Total flying time 38 hrs. 50 mins.—12 hrs. 35 mins. on I.X and 26 hrs. 15 mins. on I.Y.

Until Saturday only one machine, I.Y., was on service. The weather was very bad, almost continual rain, on Sunday, but 8½ hrs. flying was done.

Mr. J. D. Parkinson joined the Club on Monday evening and on Tuesday a full day's instruction was put in. It is very satisfactory to report that there was a good turn-out of members.

Hours flown under instruction with Mr. Parkinson, 30 hrs. 25 mins.; Solo, 5 hrs. 55 mins.; Passengers' flights, 1½ hrs. Tests, including Mr. Parkinson's first flight on the Moth, occupied 1½ hrs.

Members who flew under instruction:—Mrs. Marks, Miss Leathart, Col. Sir Joseph Reed, Messrs. Whitfield, L. Smith, Detchon, Phillips, Davidson, Howard, MacKay, Somerville, Stawart, Thirlwell, Bruce, P. R. Kennedy, E. C. Kennedy, Irving, Bainbridge, Palmer, George, Sandilands, C. Thompson, A. Bell and Dr. Dixon.

Secondary dual:—Messrs. N. S. Todd, R. N. Thompson, MacMillan. The following flew solo:—Messrs. MacMillan, C. Thompson, L. Smith and Dr. Dixon.

Pilot members who flew, with the passengers named:—Mr. Baxter Ellis with Mr. Woodson Mr. Forsyth Heppell with Mr. H. Ellis, Mr. N. S. Todd with Mr. J. Bell and Mr. Caddies, Mr. R. N. Thompson with Mr. W. P. Gibson and Mr. A. Bell.

Passengers with Mr. Parkinson:—Mrs. R. N. Thompson, Miss Minnis, Mr. Laybourne, Mr. Weltz, and Mr. Rasmussen.

Mr. L. Smith did his first solo on Saturday morning, following this up with longer flights alone on Saturday evening and Sunday.

On Wednesday Mr. Parkinson flew, with Mr. J. M. Davidson as passenger, to Bishop Auckland, where he did some excellent exhibition flying near the Bishop's Park, where a Fête was being held by the Bishop Auckland Conservative Association.

On Sunday he flew to Stockton, taking a medical man, a member of the Club, who wished to attend to an urgent case there.

Altogether it has been a very successful week and a good beginning after the slack period recently.

The Yorkshire Aero Club.

Report for week ending July 18.

Owing to an error of judgment last Sunday night there has been no flying this week. The machine, together with its brother, is expected to leave hospital in time to take part in our Pageant.

The Air Pageant, July 24.—Almost all the members of the Committee turned up on Sunday for a final meeting at the aerodrome to settle outstanding matters in connection with the Pageant. Everyone has been given a special job and Heaven help those whose job isn't carried out well and satisfactorily!

Events.—1, Preliminary Flying. 2, Inter-Club Members' Race. 3, Race for Pilot Instructors. 4, Open Handicap Race (any machine). 5, Private Owners' Handicap. 6, Relay Race (Clubs only, Moths).

In addition there will be exhibitions of trick flying, parachute descents, and the bombing of a fort.

The prizes are substantial, several large Cups and plenty of Cash.

Entries so far have been received from the Lancashire, Birmingham, London and Yorkshire Clubs, and from Mrs. Lynn, Capt. Broad and one or two manufacturers and three machines from Brough.

There are promises of attendance from big pots and brass hats.

We have room for more entries, but please send your entries in as soon as possible, as it's hard work organising a show like this and we want to know how we stand.—R. W. K.

The Midland Aero Club.

Report for week ending July 10. (Delayed in Post.)

Flying was suspended on Saturday and Sunday, July 3 and 4, as Major Dennison (Secretary), Mr. McDonough (Chief Instructor), and Mr. W. Halland (Ground Engineer) and a party of members went to Hendon for the R.A.F. Display.

On the following Sunday the party, at the kind invitation of the Aircraft Disposal Co., inspected the firm's factory at Croydon, where Mr. O. E. Olney received the visitors. With Messrs. H. H. Perry and G. W. Howland as guides a most interesting morning was spent going through the establishment. After lunch an inspection of Croydon Aerodrome and the premises and flying stock of Imperial Airways took place, and thence across to Stag Lane, where the party was most hospitably received by the London Aeroplane Club, and served with tea by Mrs. Sparks.

On Wednesday afternoon, Mr. McDonough flew EBLW up to Hendon for the King's Cup Race. The entry of this machine was made practically at the last moment, and only a very short time was available in which to tune up the machine and engine.

As is reported elsewhere, Mr. McDonough completed the course and was therefore one of the five survivors of the fourteen starters. A very creditable performance indeed and a further demonstration of the excellent qualities of the de Havilland Moth and Cirrus engine. The machine returned to Castle Bromwich on Sunday.

Enamelled badges and also transfers for attachment to motor-car screens, etc., are now available to members free of charge.

The tuition work for the period under review has been seriously hampered by the long grass on the aerodrome, and only totals some 20 hours.

The following members took flying instruction:—A. R. Miller, H. Willis, R. Jackson, S. H. Smith, L. Brighton, W. Swann, G. Perry, A. B. Gibbons.

During the period Mr. A. R. H. Miller went solo. Grass cutting is now in progress and full flying tuition work is again in operation.

Report for week ending July 17.

The total flying time for the week was 10 hrs. 35 mins.

The following members had flying instruction:—O. L. Richards, C. Fellows, S. H. Smith, W. Swann, L. Brighton.

The following members flew solo:—H. Willis, L. Brighton, G. Perry, W. Swann.

Test flights took 35 mins.

On Thursday a new addition to the Club flying stock was delivered, this being an Austin Whippet (45 h.p. Anzani), which has just been purchased from Flt. Lt. Soden, R.A.F., who brought it over by air.

It is expected that the acquisition of this very efficient and useful little machine will be a considerable benefit to our Club members.

Moths at Roehampton.

On Saturday, July 17, a "Flying Afternoon" was given by the Roehampton Club before a large gathering of gay and prosperous looking people. The meeting was organised by the Royal Aero Club and was under the patronage of the Right Honourable Sir Samuel Hoare and Air Vice-Marshal Sir Sefton Branner. The Central Band of the Royal Air Force played soothing music throughout the afternoon, and the Meteorological Department provided perfect weather.

The first event was called "Inspection of Machines." In fact the audience entertained themselves in the "Machine Park," which consisted of the red-and-white Moth, entered by Sir Charles Wakefield and flown by Mr. Broad, in the King's Cup Race, the pale blue one, owned by Mrs. Lynn and Mr. Jones, and a brown one belonging to the London Aeroplane Club.

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Mr. Broad's machine was the general favourite, and he folded back the wings to show how it could be put in the cupboard at night. And Mrs. Lynn lifted the tail of her machine into position and swung the "prop" herself to show what a homely thing an aeroplane really is.

The second event was some quite pretty aerobatics by Mr. Broad and Mrs. Lynn. Two more Moths arrived meanwhile.

After rather a long interval an air mechanic announced through a megaphone that "Three Grebe machines from No. 32 Fighter Sqdn., Kenley, were approaching in formation." They flew over the ground and, after separating, delighted everybody with a display of aerobatics as known to the R.A.F., and quite up to Pageant standard.

Everybody was watching their departure regretfully when a Snipe, flown by Flg. Off. Atcherley, of No. 23 Sqdn., Henlow, who flew well at the Pageant—which Snipe had been hanging about in the air behind the scenery during the last act—gave a wonderful exhibition of looping, rolling, diving and upside-down flying.

The last event was Aerial Golf. The five entrants were Mrs. Lynn, Mr. Sparks, Flt. Lt. Ritchie, Mr. Broad and Mr. St. Barbe, all on Moths. They were each loaded with three flour bags which they had to drop on a target marked out in the middle of the ground by a large white circle with a white bull's-eye centre. Mr. Sparks won the first prize for getting nearest to the bull's-eye, with Flt. Lt. Ritchie second.

The Duke of Sutherland then gave away the prizes. Mrs. Lynn and Mr. Broad both won prizes for stunt flying. Mr. Sparks and Flt. Lt. Ritchie were first and second in the Aerial Golf Competition. And Mr. Broad got a Consolation Prize "For winning the King's Cup."

Sir Sefton Brancker proposed three cheers for the Duke of Sutherland, who thanked everybody for their help in organising the show. He hoped it would help people to regard flying as an everyday proceeding, and to realise the possibility of keeping an aeroplane in the back garden to take the place of motor-cars and cycles at week-ends.

Then everybody who had been lucky enough to win a ticket in the lottery held earlier in the afternoon was taken up for a flight by Mr. Broad, and the others consoled themselves with tea or polo.—M. H.

[Fortunately what wind there was happened to be in a favourable direction; for experienced pilots say that in certain directions—or in a flat calm—a Moth could not lift a passenger out of the limited area at Roehampton. One suggests that if Moths are to be used for these "Reforming Society" stunts, a few sets of high lift wings should be built for the purpose. Society (with a capital S) would never notice that the speed was reduced to that of a Pterodactyl or an Auto-Giro, and would be impressed by the quick get-off and slow landings.—C. G. G.]

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK

Trips per Day.—Monday, 26; Tuesday, 28; Wednesday, 27; Thursday, 29; Friday, 25; Saturday, 27; Sunday, 9.

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London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 82, passengers 660, freight 20 tons.

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Amsterdam—Rotterdam—London: Machines 24, passengers 133, freight 2.6 tons.

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Brussels—London: Machines 12, passengers 79.

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Berlin—London: Machines 2, passengers 8.

SPECIAL:

Machines 0, passengers 0.

Total number of trips by British Machines, 82, carrying 660 passengers. Foreign Machines, 87, carrying 539 passengers.

Comparative Figures:

Week ending July 11:

Machines, 169; Passengers, 1,199; Crews, 218; Total personnel, 1,477

Corresponding week, 1925:

Machines, 165; Passengers, 838; Crews, 218; Total personnel, 1,106.

Corresponding week, 1924:

Machines, 199; Passengers, 991; Crews, 250; Total personnel, 1,241

Corresponding week, 1923:

Machines, 121; Passengers, 604; Crews, 194; Total personnel, 798.

Corresponding week, 1922:

Machines, 152; Passengers, 411; Crews, 256; Total personnel, 667

Corresponding week, 1921:

Machines, 115; Passengers, 430; Crews, 137; Total personnel, 567

Corresponding week, 1920:

Machines, 106; Passengers, 219; Crews, 127; Total personnel, 356.

PERSONAL NOTICES.

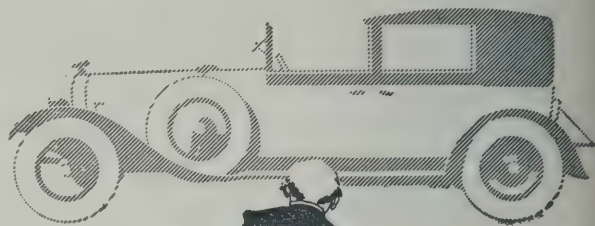
DEATH.

HUGHES.—On July 19, at Whitley Aerodrome, Coventry, as the result of a flying accident, Flg. Off. D. A. Hughes, of the Reserve of Air Force Officers.

Mr. Hughes had retired from the Royal Air Force and had been acting as instructor at the Armstrong-Whitworth School, established at Whitley Aerodrome, for the training of officers of the Reserve of the R.A.F.

The Air Ministry states that at the time of his death he was giving a demonstration flight which had no connection with his work as instructor to the R.A.F. Reserve, on a Siskin aeroplane which did not belong to the R.A.F.

According to reports he was flying at a height of over 1,000 feet when the machine was seen to nose-dive to the ground. His death was instantaneous.



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THE AEROPLANE—JULY 28, 1926.

SLOT WINGS.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

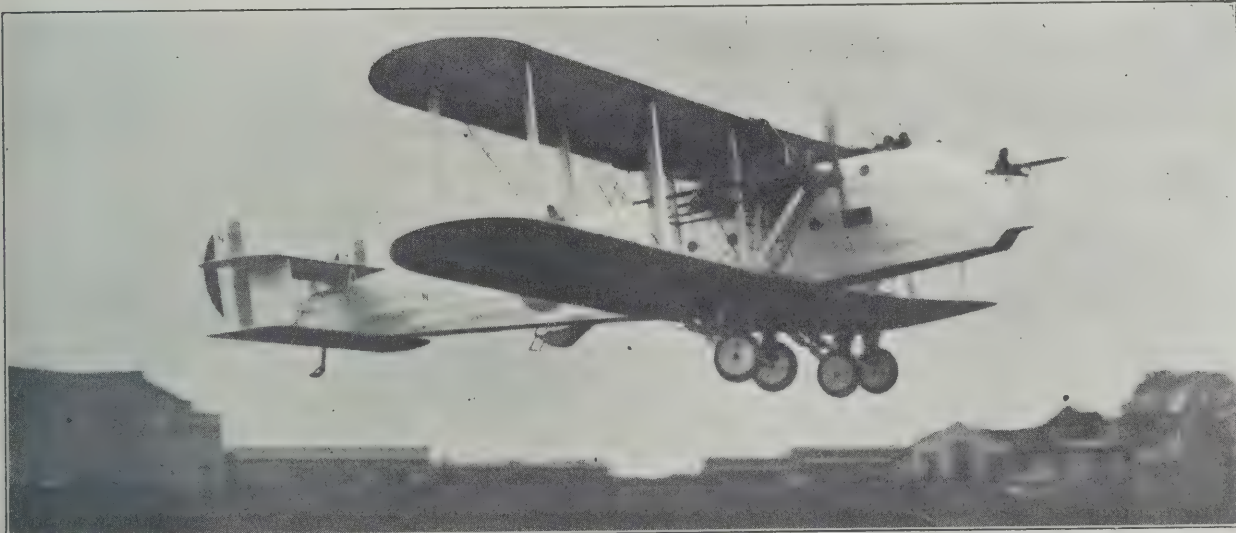
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ON THE SLOTTED WING AGAIN.

Demonstrations of the Handley Page Slotted Wing were given at the Handley Page Aerodrome at Cricklewood on July 20 and 21. The machine on which the demonstrations were made was the Handley Page Hendon with a Napier Lion engine. This machine is a biplane which was produced about two years ago and is a two-seater variation of the Handley Page Hanley. It is a torpedo-carrier intended for deck-landings by the Fleet Air Arm.

Being purely an experimental machine intended primarily to demonstrate the possibilities of the slotted wing for deck-landing, it has naturally been equipped with every possible gadget which the Admiralty and the Air Ministry together could crowd onto it, although obviously it would have cost very much less money and could have been put into use with much less waste of time if it had been built with the simplest possible equipment and had merely carried dead-load in place of all these gadgets. The result of it all is that it is now two years out of date.

THE FULL SLOT EQUIPMENT.

The really interesting thing about the machine is of course the slot arrangement. The leading edges of both the upper and lower planes have slots along their whole length, and the trailing edges have flaps which, when pulled down, open a slot between the leading edge of the flap and the rear spar of the machine. The slots and flaps extend along each wing as far as the aileron and for the rest of the length the slots and ailerons work in conjunction.

That is to say, when the ailerons are up in flying position the corresponding slots are closed. And when the ailerons are pulled down the corresponding slots are open, irrespective of whether the slots and flaps on the inner portions of the wings are open or closed.

DECK-LANDING.

The Hendon came to Cricklewood for these demonstrations

after a prolonged period of deck-landing experiments on one of our aircraft-carriers.

One gathers that these experiments were highly satisfactory, and it is said that the Hendon was in fact the first machine to land on the deck of a ship carrying her full war load of petrol and the Service torpedo. One of the latest and most successful experiments was to land the machine over the bows of the ship when she is steaming *down wind*.

Hitherto all deck-landings have been done by turning the ship head-to-wind, so as to give the deck as much speed as possible in the same direction as that in which the machine had to alight, so that the head wind would be slowing the machine, and thus, in effect, reducing the relative speed between the aeroplane and the deck. The objection to this manoeuvre is obviously that in action an aircraft-carrier which steamed head-to-wind to pick up a number of aeroplanes which had been launched earlier in the action might have to steam for many miles right away from the fleet to which she was supposed to be attached, and while thus steaming would be entirely without protection against other warships.

Therefore the Navy has been anxious to get hold of an aeroplane which would be capable of landing on the deck of a ship steaming down-wind as well as head-to-wind. Naturally if the ship is steaming down-wind it must increase the difference between the landing speed of the aeroplane and the speed of the deck on which it is to alight.

Apparently by the use of the Handley Page slot the Hendon was able to reduce her speed through the air to practically nothing at the moment of landing and so was able to alight in a direction opposite to the movement of the ship.

WHY LAND ON DECKS?

Of course, that is all very satisfactory from a naval point of view. But one cannot help feeling that the Air Force is rather approaching that problem from the wrong point of view. The real object of the Air Force should be to make



THE SLOT WING.—The Handley Page Hendon getting off at Cricklewood. In this photograph the main slots are fully open, and the flaps on the trailing edge are pulled down to give a quick get-off. The aileron slots on the near (or port) side are partly closed as the ailerons are raised to a higher level than the main flaps.

all ships, including aircraft-carriers, unnecessary. A properly efficient fleet of bombing and torpedo craft with a range of 200 miles out and another 200 miles home would ensure a belt of sea 100 miles wide being kept clear of hostile sea craft either surface or submarine.

With a 200-mile radius (not range) of action and an adequate supply of aircraft the whole British Empire could be protected against sea-going craft while operating all the time from aerodromes ashore. Ships should only be carriers, except for special work, such as, for example, impressing the inhabitants of some troublesome island, or bombing a coast town, where no counter-attack from the air is to be feared.

Still, so long as the Navy retains its political power, presumably the Air Ministry must play up, or down, to it. And so the Air Ministry must spend valuable money on deck-landing machines and so forth.

There is at any rate some consolation in knowing that if and when we produce really effective deck-landing machines we shall be able to use them equally well for landing on very minute aerodromes or on landing platforms erected where ordinary aerodromes are not available.

So out of evil cometh good. And the Handley Page Slot is a very good thing indeed. If the Navy forces the Air Ministry's reluctant experts to hasten its development, the Navy will at any rate have done something to justify its existence.

A LONG-DELAYED DEMONSTRATION.

On July 20 a demonstration was given to a number of press people and other visitors. The machine was flown by Mr. Wilcockson, the well-known Imperial Airways pilot, who also does the test work for the Handley Page people. He showed how slowly the machine can land and how quickly it can get off with the slots open, and how it is under perfect control when stalling and sinking. Also he showed how when the ailerons-cum-slots are used the machine can be manoeuvred laterally without any yawing tendency to be overcome by the rudder.

All these good points about the slot wing have been discussed and described and advocated in *THE AEROPLANE* for years and years and years. Therefore all this is ancient history to all readers of *THE AEROPLANE* and probably to most other people, except the Air Ministry's technical experts.

The one regrettable feature of the whole demonstration was that it should have occurred in August, 1926, instead of about January, 1923. No blame attaches to Handley Page, Ltd., who have worked strenuously on the development of the slot, and on the gear which is necessary to operate it, all these years since the slot principle was first fully described and illustrated in *THE AEROPLANE* some time in 1921.

Naturally, the Handley Page Company's progress has been hampered by financial considerations. But if the Air Ministry's technicians had realised the value of the slot prac-



THE SLOT WING.—A Göttingen photograph showing how the air-stream breaks (and the wing stalls) with the slot closed, and how the stream flows over the wing with the slot open.

tically every machine in this country, both Service and civilian, would have been equipped with slots at least three years ago, and a large number of valuable lives would have been saved.

THE POSSIBILITIES.

One takes this opportunity of stating one's personal belief that with proper development of the slot idea, an aeroplane of what we are accustomed to regard as the normal type, can be made to do anything which is done by the Hill



THE LATEST SLOT WING.—Mr. Handley Page (left) and Mr. Wilcockson explaining the slotted wing on the Hendon. The photograph shows how the slot on the outer section of the leading edge is inter-connected with the aileron so that when the aileron is down the slot is open.

56,000 miles
without mishap!

SUCH is the record of the Napier engines
on the recent flight from Cairo to Cape
Town and back via Cairo to England.

Four Fairey aeroplanes made this flight.
Flying in formation through intense heat,
rain and sandstorms, no mechanical trouble
was experienced and no change of engine
made.

The same type engines as made this epoch-
making flight possible are available for
you—they were ordinary standard Service
NAPIERS.

For freedom from trouble
and absolute reliability
on all occasions and in
all climates install the—

NAPIER

The finest Aero Engine in the World

D. NAPIER & SON, LTD.
ACTON, LONDON, W. 3

"Never before have a number of aeroplanes, flying in company,
carried out without a hitch an extended journey over continent and
ocean, over high land and low, and in great temperature contrasts."

Daily Telegraph, 22nd June, 1926

Tail-less machine and the Auto-Giro, which are attracting so much public and official attention at the moment. And it would do that while retaining the speed and climb and weight-lifting ability of a normal aeroplane.

As to what constitutes a "normal aeroplane," one may here quote a remark of Captain Geoffrey de Havilland's the other evening, when he said that if we had all been accustomed to tail-less aeroplanes for the last seventeen or eighteen years—as we very well might have been if the Weiss experiments in England and the Etrich experiments in Austria had been adequately supported financially—and if anybody had at this date produced an aeroplane with a tail and a rudder and elevators, everybody would probably have hailed it as an immense advance in aeroplane design and aerodynamic science.

If somebody went to the expense of building an aeroplane of normal type with the light wing-loading of the Pterodactyl it could certainly do anything in the way of slow manoeuvring and flying and landing which that machine does.

The one great obstacle to the general adoption of the slotted wing at the moment is the difficulty of making a simple and cheap and light, and at the same time adequate and reliable, mechanism to operate the slots. The Handley Page Company seem to have arrived at something very like the most desirable design. Being still in the experimental stage there is probably room for detail improvement, and it will probably be made considerably lighter, for the weight of the operating gear must absorb quite a considerable percentage of the benefit derived from the slots in the way of extra lifting power.

TEACHING THE EXPERIENCED.

On July 21 the Hendon was turned over to be flown by the test pilots of a number of the leading aircraft firms. Among those who flew it while one was present were Mr. Piercy of the Gloucester Company, Mr. Openshaw of the Westland Company, Mr. Barnard of Imperial Airways, Mr. Bulman of the Hawker Company, and Mr. Payn of Vickers Ltd. Capt. Frank Barnwell of the Bristol Co. and Mr. Lankester Parker of Short Bros. also flew the machine.

Mr. Bulman, who was the pilot who carried out the original experiments at Farnborough on an Avro with intercommunicating slots and ailerons, naturally gave a very perfect exhibition of what slot control can do in the way of keeping a machine fully under control below stalling point.

Mr. Barnard, who had never flown a slotted-wing machine before, gave a most amazing exhibition of skilful piloting. It was in fact far more spectacular than Mr. Bulman's, because he half-looped the machine and generally pitched her about in the air in the way which recalled Mr. Kipling's phrase about "incredible improprieties." One remarked to Mr. Savage of the Handley Page Company that Mr. Barnard seemed to have perfect confidence in Handley Page construction, to which Mr. Savage replied that he ought to have, considering that Imperial Airways Ltd. had lately been using nothing else.

The general opinion of the pilots seemed to be very favourable towards the slots. This is extremely satisfactory, because the average pilot, even a test pilot, is among the most conservative of human beings and always starts with a prejudice against anything which he has not flown before.

One pilot remarked that the machine was slow considering

its engine, as it only showed about 105 m.p.h. on the indicator. That seems natural, considering that the machine is not built for speed and probably has not got a fast wing curve, and has all sorts of gadgets and things sticking out all over it, besides having an undercarriage designed for torpedo-dropping, which takes a lot of pushing through the air.

Also it is necessary to remind readers that the machine is over two years old and that probably the latest version, which is now in process of construction, will be very much faster. One imagines that quite a good deal of speed could be got simply by cleaning up the wing structure itself.

At any rate one gathered quite enough from the demonstration to confirm one's belief expressed five years ago that in the slotted wing lies the solution of most of our aeronautical difficulties.

Not only can it solve the Safety First problem, by abolishing for ever all the accidents which occur through stalling and diving and spinning, but it does away with the immense amount of expense incurred by the necessity for enormous aerodromes so that the machines of the present day can have a long enough run to get off or land.

If only because of the safety which it gives to flying, the slotted wing ought to be in use on all commercial machines to-day, and on all Service machines, except, perhaps, the very high-speed single-seat fighters.

The attitude of the Air Ministry's technical experts towards the slotted wing has been absolutely criminal. It is true that they have not condemned it, but they have not shown anything like the enthusiasm or energy over its development which they should have shown. And the death of every aviator who has been killed through his machine stalling in the last three years—to be perfectly fair to the experts one will give them the three years necessary for development—can be definitely laid at their door.

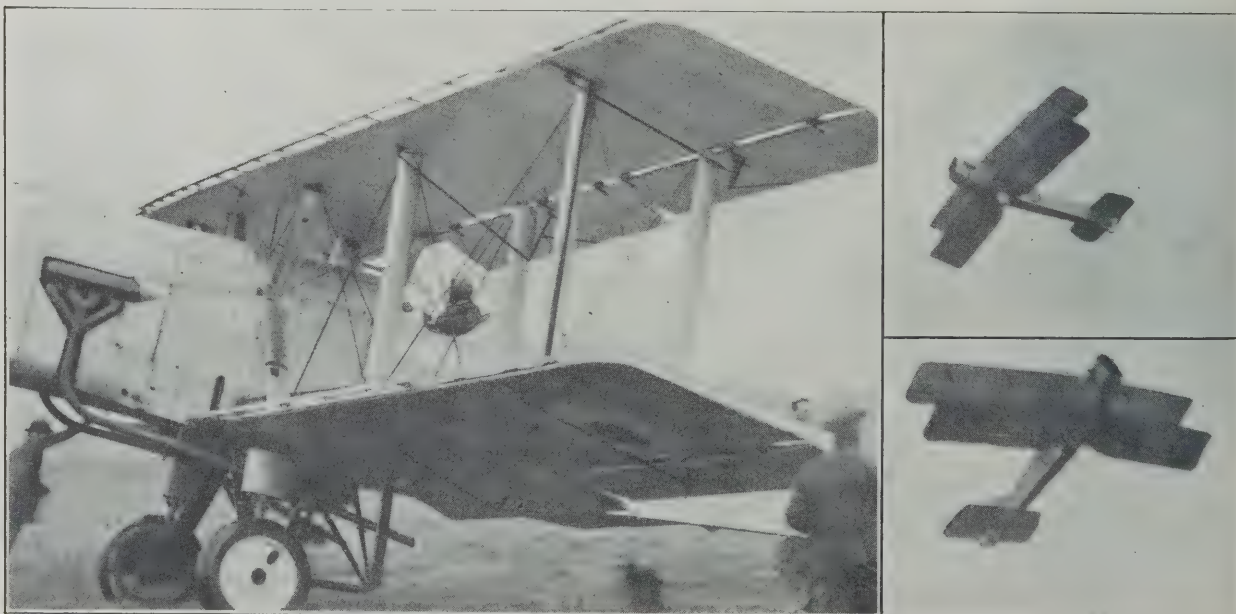
One can only hope that under the new direction which we are promised on the Supply and Research side of the Air Ministry, and in the Directorate of Technical Development, sufficient progress will be made in the development of the slotted wing before the end of next year to make it as commonly used on British aircraft as are pneumatic tyres on motor-cars.—C. G. G.

THE NEW CHAIRMAN OF THE R.Ae.C.

At a meeting of the Committee of the Royal Aero Club held on July 19, the Lord Thomson of Cardington was elected Chairman of the Club for the current year.

As Secretary of State for Air under Mr. Ramsay MacDonald's Labour Government, Lord Thomson showed highly intelligent and sympathetic interest in the R.A.F. Since then he has spoken much on air affairs and has always shown proper understanding of his subject.

As a former officer of the Royal Engineers, he has had a technical training which fits him to understand the problems of aircraft constructors. And as a soldier of wide experience he knows the usefulness of staff work. Also, as a politician, he appreciates the sweet uses of advertisement. With all these qualifications he should make a very good Chairman of the Royal Aero Club.



THE SLOT WING.—Left, showing the aileron partly up with the corresponding slot nearly closed. Right, showing the machine in the air with ailerons in flying position and the corresponding slots closed, with the main slots still open.



*The King's Cup Race
won by a de Havilland "Moth"
piloted by Capt. Broad who writes—*

TELEPHONE
COLINDALE 6163-6165

STAG LANE AERODROME,
EDGWARE
MIDDLESEX.

12th July, 1926.

Messrs. The Fairey Aviation Co. Ltd.,
Hayes,
Middlesex.

Dear Sirs,

I am sure you will be interested to hear
how very satisfied I was with the Fairey-Reed
Duralumin Airscrew which was fitted to my 'Moth'
in the King's Cup Race.

The extraordinarily high average speed
seems to me to be a wonderful demonstration of
the efficiency of the propeller, and I can say
that I was freed of any anxiety as to its
standing up to over sixteen hours of full throttle,
during which time I passed through several very
violent rainstorms.

May I congratulate you upon your product?
Yours truly
H.S. Broad

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ALL-METAL AIRSCREW

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Patent Airscrews for the British Empire:*

FAIREY AVIATION COMPANY LIMITED
HAYES MIDDLESEX

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

MR. SIDDELEY'S PROMOTION.

Readers of THE AEROPLANE will learn with interest that Mr. J. D. Siddeley, hitherto best known as Managing Director of Armstrong-Siddeley Motors Ltd., and of Armstrong-Whitworth Aircraft Ltd., has been appointed Senior Managing Director, and Chairman of the Committee of Management, of Sir W. G. Armstrong-Whitworth and Co. Ltd., of Elswick.

Mr Siddeley deserves every congratulation on his rise to so important a position. Armstrong-Whitworth Ltd. is one of the three great armament firms, commonly known as the Armament Ring, which includes Vickers Ltd. and William Beardmore and Co. Ltd. Though the three firms are entirely separate, they have considerable community of interests, and a number of subsidiary firms exist in which blocks of shares are held by two or more of these three great armament firms.

Since the War, all three have naturally had a very difficult time owing to the cancellation of war contracts. The colossal cut in the capital of Vickers Ltd. is recent history, and the Armstrong-Whitworth balance-sheet has rather shocked the share market since then.

Mr. Siddeley has evidently been appointed to his new exalted position because of the success which he has achieved in the management of the subsidiary firm of Armstrong-Siddeley Motors Ltd.

Mr. Siddeley's first connection with mechanical transport was his engagement by the Rover Cycle Company, somewhere about the year 1895. Thence, in the earliest days of motoring, he joined the Wolseley Motor Company, which was, and still is, a subsidiary of Vickers Ltd. There—after the departure of "Pa" Austin, now better and more respectfully known as Sir Herbert Austin of Austin Motors Ltd.—he produced the Wolseley-Siddeley car, which soon made a reputation for itself as a reliable and thoroughly English piece of work.

Thereafter he set up in business on his own account, with the assistance of Capt. Deasy, and produced the Siddeley-Deasy car, which still further enhanced his reputation. The Siddeley-Deasy car was never a sporting car nor a speed car, but it was always a gentleman's carriage.

It was the Siddeley-Deasy Company which first started making aero-engines when the development and mass-production of the B.H.P. engine was turned over to them by the Air Board, after it had been developed from the original Beardmore and Austro-Daimler by Major Halford, who is now of A.D.C. Aircraft Ltd. As the Siddeley Puma, the engine became very popular, when once the Air Force had learned the very simple little dodges required to get it in order. And to-day it is regarded as one of the most reliable engines in the World.

The double Puma, known as the Tiger, was never developed fully and the firm's interests were diverted to the air-cooled type, with the result that the Jaguar was produced and has achieved quite a considerable amount of success in the hands of Air Force personnel.

The half-Jaguar 200 h.p. engine, known as the Lynx, has done very well on training machines and should have quite a considerable future, if one may judge by the success attained in the United States by the Wright Whirlwind of almost the same power. For there is undoubtedly a market for a radial engine of about 200 h.p., and the Lynx seems to be the only engine in that category on the British market.

More recently the firm has produced the Genet, in the "Cat" class of engines, a very neat five-cylinder radial of 60 h.p. That also should meet with success as its only competitor in England is the Cirrus. Though, from what one hears, its price is likely to prevent it from appealing to the owner-pilot.

These brief notes will show the astuteness with which Mr. Siddeley has throughout his career adjusted his programme to meet the demands of the particular market for which he was catering. His success in this way should therefore be a happy augury for the future of Armstrong-Whitworth Ltd. and its unfortunate shareholders.

Though one has disagreed from Mr. Siddeley's opinions quite considerably in the past, one has always recognised his business capabilities and one wishes him well in his task of reviving the Armstrong firm.—C. G. G.

AN ACCIDENT TO THE MARCHESE DI PINEDO.

On July 20 the Dornier Wal flying-boat (two 500 h.p. Isotta-Fraschini engines) to be used by Col. the Marchese di Pinedo on his forthcoming Round-the-World flight, was being tested at Pisa, when in attempting to take off with a 3,000 kg. load one of the wings was caught by a wave and the machine capsized.

Major Conti, the pilot, was drowned, and the five other members of the crew, which included the Marchese di Pinedo, were injured.

The accident will not interfere with the proposed Round-the-World flight.

THE VALUE OF THE JUPITER.

The following extract from French *Journal Officiel*, dated June 11, 1926, will give some idea of the value placed on the Bristol Jupiter engine by the French Military Authorities. The French Minister for War, speaking in defence of his Department against the criticisms to which reference was made recently in this paper, said:—

If your report had been drawn up eight months ago, it would have dealt with another engine and, if it is not mentioned in your report it is because facts have outweighed criticism. As nobody has referred to it, I will, myself, speak of the Jupiter engine.

You all know, Gentlemen, that car or aircraft engines are cooled by means of a water radiator. Radiators are most fragile articles. A bullet through the radiator of an aeroplane spells a fatal ending.

It is therefore easily understood that there is a great advantage in fitting to war machines engines without radiators, namely air-cooled engines.

Three or four years ago, in the course of a friendly interview with French manufacturers, I advised them to consider the production of this new type of engine. All they had to do was willingly to make an effort—hard, perhaps, but necessary—in order to succeed. They preferred to continue in improving the classical types of engines.

What happened? To-day more than half the fighting units of the British Air Force are fitted with air-cooled engines, whereas the only engine of this type, really efficient and manufactured here, is the Jupiter engine made under British licence. It is up to our designers to conquer in this new field the lead they hold where water-cooled engines are concerned.

Three years ago the French Navy, despite certain resistance, ordered a few Jupiter engines. It was no easy matter. It caused a bursting of a storm in that class of the Press already mentioned.

The Naval Minister, who had taken this decision quite deliberately, because facts seemed pertinent to him, became alarmed. He came to me. At the time, I remember it well, he was inclined to cancel the order. I advised him not to give way, pointing out his rather timid attitude and regretting he had not been forestalled by the War Minister.

This was three years ago. What are the consequences? They are the Goliath machines fitted with Jupiter engines which last year I had to borrow from the Navy for action in Morocco, for they were the only machines capable of carrying out efficient bombing raids against the Riff positions.

I need not tell you that in the orders given last year by the Ministry of War I placed the Jupiter in the position it deserved. I know, however, of several French firms building powerful air-cooled engines, and I do not doubt their prompt and outstanding success.

The Honourable M. Gamard has reproached me for having issued the order rather late and in two parts. What were the reasons? I delayed the complete yearly order because I was awaiting the results of the Scout Competition in order to make a more judicious selection from the competing machines. But having to wait too long for these results, I had to take a decision and place the greatest part of our order, reserving, however, a part of it for engines receiving the highest awards in the Scout Competition.

This is how I fulfilled my duty as Minister of War as regards the question of engines.

Some speakers have credited me with certain technical knowledge. I thank them for it. It may or may not be a happy chance, unlikely to occur again, that the War Minister of to-day is a man who, for the past 20 years has been interested in the theory and progress of aviation.

But there is no need for a Minister to be a specialist in order to decide to the best advantage on the choice he must make. He must have decision and character, and not shirk the responsibilities. He must have a psychological knowledge of his advisers and of the aircraft industry. With these qualifications a man will be up to his duty whatever his position.

With common sense, and scorn of criticism from underlings, and contempt of attacks, I have overcome the difficulties preventing the choice of the Jupiter engine.

AN INTERMISSION IN FRENCH CONTROL.

In these days of quick-change French Governments it is not possible and it is hardly of interest to notice who does or who does not hold particular offices. But M. Laurent Eynac has held the post of Under-Secretary for Air under so many Governments of different political complexions that the fact that he was not appointed to M. Herriot's Cabinet, which was formed somewhere about July 19 and promptly defeated, is worthy of note.

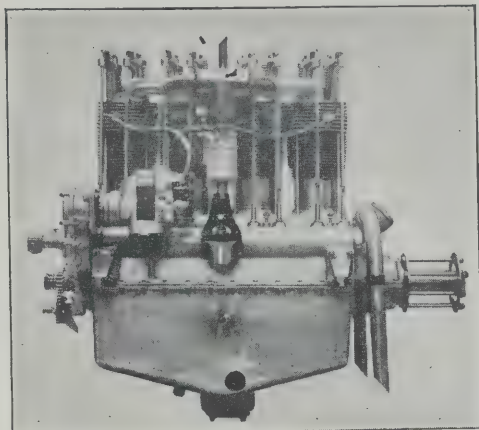
M. Laurent Eynac had been Under-Secretary for Air since January, 1921, and served in ten successive Ministries, including M. Herriot's former Cabinet. He has done very good work by encouraging commercial and sporting flying and by setting a good example in always making his own journeys by air whenever possible. Undoubtedly the progress made by French aviation during the past five years owes much to the fact that M. Eynac assured a continuity of policy.

M. Eynac was the founder-proprietor of *L'Air*, the leading French aeronautical paper, but severed his personal connection with it on taking office in 1921. The post of Under-Secretary for Air in M. Herriot's brief Government was filled by a M. Robaglia, of whose aeronautical interests one knows nothing.

Possibly by now M. Eynac may have returned to office under the next French Government but two or three. But even if he has done so the interruption in the continuity of his office is worth recording.

A.D.C. Successes

KING'S CUP



1st D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. H. S. Broad.

4th D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. F. G. M. Sparks

5th D.H. 'MOTH'—27/60 h.p. A.D.C. 'CIRRUS' ENGINE.

Pilot: Capt. W. J. McDonough.

All the above machines were fitted with standard 'CIRRUS' Mark I Engines, which ran faultlessly at full throttle throughout a period of over sixteen hours and a course of 1,464 miles.



3rd MARTINSYDE A.D.C.1.—

385 h.p. Siddeley 'Jaguar.'

This machine, piloted by
Sq.-Ldr. H. W. G. Jones, won

the Prize for

FASTEST TIME

with an average speed of
**151.92 m.p.h. — RECORD
SPEED FOR THIS EVENT.**

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

July 20.

GENERAL DUTIES BRANCH.—Lt. E. J. Howes, R.A.R.O., is granted a S.S. comm. as a Flg. Off. for three years on the active list (June 30). The following are granted S.S. comms. as Plt. Offs. on probation, for five years on the active list, with effect from and with seniority of, July 14:—B. H. Ashton, B. W. Barton, J. Barton, H. B. Collins, R. W. Coneybeer, B. A. J. Crummy, R. C. Edwards, H. V. Forbes, R. C. Greenhalgh, R. G. Hennessy, D.S.O., M.C., D. K. Hewison, C. E. Kay, H. C. Marett, A. O. Moore, L. K. Mundy, C. Pitt-Hardacre, M. M. Restell-Little, F. H. L. Searl, F. S. Smythe, A. J. Vaughan, W. T. Walton, A. R. Ward.

The following Plt. Offs. on probation are confirmed in rank:—A. W. Whitta (June 15); L. G. Rumsey (June 16); C. V. Mossman (June 22); D. G. K. Walker (June 22).

Flg. Off. F. Barnshaw is placed on the retired list at his own request (July 19); Flg. Off. W. N. Sherlock is transferred to the Reserve, Class A (July 21); Flg. Off. A. A. N. D. Pentland, M.C., D.F.C., is transferred to the Reserve, Class C, in this rank and is granted permission to retain the rank of Flt. Lt. (July 21).

The S.S. comm. of Plt. Off. on probation W. S. Barnicott is terminated on cessation of duty (July 1).

MEDICAL BRANCH.—L. Freeman is granted a S.S. comm. as a Flg. Off. for three years on the active list, with effect from and with seniority of July 1.

The following officers of the Army Dental Corps are granted temp. comms. in the rank stated on attachment to the R.A.F. (July 1). They will continue to receive emoluments from Army funds:—Sq. LDR.—J. G. Worsley (Maj.).

Flt. Lts.—T. K. Place (Capt.), H. J. Proctor (Capt.), H. O. Sumerling (Capt.).

The following officers of the Army Dental Corps relinquish their temp. R.A.F. comms. on return to Army duty (July 1):—Sq. LDR.—D. Blair (Maj.).

Flt. Lts.—R. M. King (Capt.), D. H. W. Williamson (Capt.), A. Williams (Capt.).

Flt. Lt. W. G. Weston, M.B., relinquishes his temp. comm. on ceasing to be employed (July 1).

MEMORANDUM.—Sec. Lt. W. J. Singleton relinquishes his hon. comm. on enlistment in the Army (June 11).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. in the General Duties Branch as Plt. Offs.:—

Class A.—H. A. Denny (July 20).

Class A.A.—S. Armitage, R. E. Hopper, J. F. X. McKenna, G. W. Phillips, E. T. Scott, V. V. W. Vallance (July 5); D. J. T. Haynes (July 7).

Flg. Off. W. M. Miller is confirmed in rank (June 28); Plt. Off. H. W. P. Stewart is transferred from Class A to Class C (July 17); Flg. Off. A. J. Packham is transferred from Class B to Class C (Jan. 19).

The following relinquish their comms. on completion of service:—Flt. Lt. W. D. Thom, D.F.C. (May 29); Flg. Off. L. P. Coombes, D.F.C. (May 29); Flg. Off. E. D. Salthouse (June 19); Flg. Off. R. D. Leigh-Pemberton, M.C. (June 26).

Flg. Off. M. V. Molony relinquishes his comm. on account of ill-health and is permitted to retain his rank (July 21).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Plt. Offs.:—No. 601 COUNTY OF LONDON (BOMBING) SQUADRON.—

J. J. Parkes (July 13); H. N. St. V. Norman (July 20); N. H. Jones (July 20).

No. 602 CITY OF GLASGOW (BOMBING) SQUADRON.—J. P. Drew (July 15).

ACCOUNTANT BRANCH.—The following to be Plt. Offs.:—No. 602 CITY OF GLASGOW (BOMBING) SQUADRON.—H. G. Davidson (July 15).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—The following are promoted:—STAFF NURSES TO BE SISTERS.—Miss M. G. Wiseman (acting Sister), Miss A. M. Hardwicke (acting Sister), Mrs. G. M. Rutledge (acting Sister), Miss E. Crozier, Miss E. L. M. Graham (acting Sister), Miss A. M. Angus, Miss M. B. Morrison, Miss P. K. Pearce (acting Sister), Miss C. C. Kirkpatrick, Miss D. E. Mallett, Miss D. V. Mansell, Miss E. J. Stuart (acting Sister), Miss E. A. Nunn (acting Sister), Miss G. Imman, A.R.R.C. (acting Sister), Miss M. E. Hards, A.R.R.C. (acting Sister), Miss M. Manders, Miss F. L. White, Miss A. F. Acheson, Miss M. H. Adamson (acting Sister), Miss M. E. Garnett, Miss E. M. Featherby, Miss C. McL. Youngson (acting Sister), Miss E. W. Hunter (acting Sister), Miss K. M. Beall (acting Sister), Miss J. K. A. Browne, Miss E. M. Buckley, Miss M. B. Charlesworth, Miss M. E. Ball, Miss E. M. Burton, Miss F. M. Morey, Miss H. W. Cargill, Miss W. E. Bailey, Miss M. E. Grieseson (July 1); Miss A. W. Marsland (July 2).

Appointments.

Week ending July 27.

GENERAL DUTIES BRANCH.—Group Captain E. D. M. Robertson, D.F.C., to R.A.F. Base, Gosport, to command, 19/7.

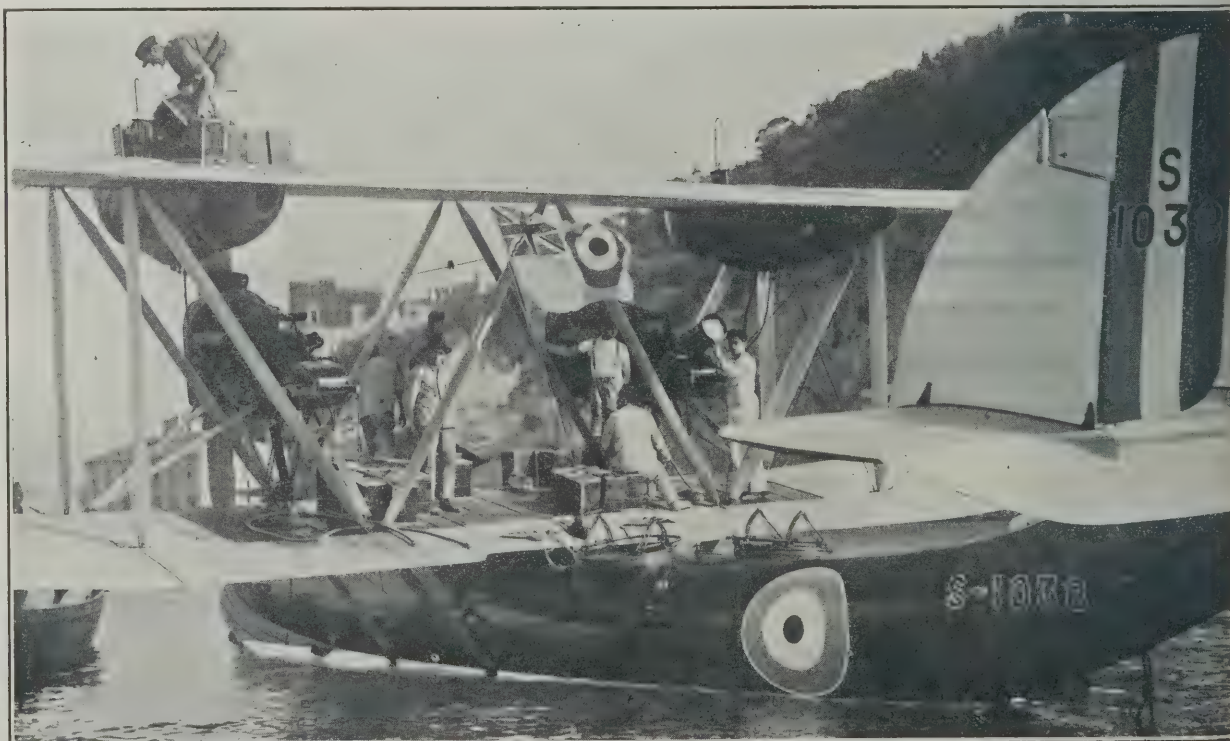
Wing Commander J. T. Cull, D.S.O., to H.Q., Coastal Area, for duty as Fleet Aviation Officer on Staff of C. in C., Atlantic Fleet, 19/7.

Flight Lieutenants F. Thomasson, D.F.C., M.M., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 2/7. J. A. Hollis, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 19/6. J. A. Sadler, to R.A.F. Training Base, Leuchars, 19/7. A. R. M. Rickards, A.F.C., to No. 24 Sqdn., Kenley, 19/7. O. E. Carter, to Home Aircraft Depot, Henlow, 1/8. N. C. Saward, to No. 5 Armoured Car Co., Iraq, 15/5.

M. M. Freehill, D.F.C., to No. 1 Sqdn., Iraq, 25/6.

Flying Officers H. M. S. Wright, to Experimental Section, R.A.E., Farnborough, 26/7. J. Summers and P. E. G. Sayer, to No. 22 Sqdn., Martlesham Heath, 26/7. C. H. F. Nesbit, to Armament and Gunnery School, Eastchurch, 19/7. T. W. S. Brown, to Armament and Gunnery School, Eastchurch, 26/7. C. C. K. Daggs, A.F.C., to R.A.F. Base, Gosport, on transfer to Home Estab., 15/5. K. C. McKenzie, M.B.E., to Electrical and Wireless School, Flowerdown, on transfer to Home Estab., 28/6. E. J. Howes, to H.Q., Palestine Command, on appointment to S.S. Comm., 30/6. E. J. Howes, to H.Q., Iraq, 8/7. V. S. Bazalgette, to No. 2 F.T.S., Digby, on appointment to a Temp. Comm. from Army, 17/7. L. E. Dowse, to R.A.F. Base, Gosport, 12/7. T. J. E. Thornton, to No. 6 Sqdn., Iraq, 9/6. L. W. Lane, M.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 6/7. M. C. Pascoe, to R.A.F. Base, Calshot, on transfer to Home Estab., 12/7. J. H. Hargroves, to No. 2 F.T.S., Digby, 19/7. H. R. McL. Reid, D.F.C., to No. 2 F.T.S., Digby, 19/7. C. L. Lowe, D.F.C., and J. H. Caulfeild, to No. 5 F.T.S., Sealand, 19/7. R. Scott-Taylor, to Armament and Gunnery School, Eastchurch, 19/7. H. R. D. Waghorn, to C.F.S., Upavon, 19/7.

Pilot Officers L. F. T. Price, to No. 56 Sqdn., Biggin Hill, 21/7. The Earl of Bandon, to No. 5 F.T.S., Sealand, 19/7. H. R. Bardon, to No. 17 Sqdn., Hawkinge, 19/7. G. E. Campbell, D.F.M., and A. H. Owen, to No. 2 F.T.S., Digby, 19/7.



SHOWING THE FLAG.—One of the Supermarine Southamptons (Napier engines) which have been cruising round the Mediterranean, filling up at Naples with Shell Spirit. The flag of the Royal Air Force may be seen "flying from the main"—in this case plane and not mast.



MOTHS

AT THE
YORKSHIRE AIR
PAGEANT.

¶ Of the eighteen aeroplanes participating in the Air Pageant organised by the Yorkshire Aeroplane Club, at Sherburn-in-Elmet, on July 24th, TWELVE were de Havilland MOTHS.

¶ They were flown by members of the Yorkshire, London, Lancashire and Newcastle Clubs and by several private owners.

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ENGINE WITH DUAL IGNITION.
-
- DUAL CONTROL.
-
- FOLDING WINGS.
-
- HAND STARTER IN COCKPIT.
-
- RUBBER IN COMPRESSION
UNDERCARRIAGE.
-
- LUGGAGE COMPARTMENT.
-
- RANGE.....3½ HOURS.
-
- PETROL CONSUMPTION...20 M.P.G.
-
- SPEED RANGE.....40-90 M.P.H.
-
- AEROBATIC CERTIFICATE
OF AIRWORTHINESS.

THE RACE FOR
**THE
KING'S CUP**
WON BY
Capt. H. S. BROAD, A.F.C.
ON A
DE HAVILLAND
MOTH
AT A SPEED OF
90.4 M.P.H.

The undermentioned Pilot Officers are all posted to the R.A.F. Depot, Uxbridge, on appointment to S.S. Comms. (on probation) with effect, 14/7:—B. H. Ashton, B. W. Barton, J. Barton, H. B. Collins, R. W. Coneybeer, B. A. J. Crummy, R. C. Edwards, H. V. Forbes, R. C. Greenhalgh, R. G. Hennessy, D.S.O., M.C., D. K. Hewison, C. E. Kay, H. C. Marett, A. O. Moore, I. K. Mundy, C. Pitt-Hardacre, M. M. Restell-Little, F. H. I. Searl, F. S. Smythe, A. J. Vaughan, W. T. Walton, A. R. Ward. A. H. Campbell-Horsfall, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 27/6.

The undermentioned Pilot Officers are all posted to No. 2 F.T.S., Digby, on appointment to S.S. Comms. (on probation), 17/7:—T. M. Abraham, P. V. Anson, G. M. Buxton, R. J. Carvell, H. H. Ellison, B. G. Farrow, C. G. Grenfell, L. S. Hill, E. J. Martin, K. E. Parker, J. W. Pease, A. A. Rumsey, A. E. Scott Moore, N. W. K. Seeman, E. P. Shine, K. R. Soward, D. Taylor, J. R. Whitley, C. C. D. Williams.

MEDICAL BRANCH.—Flight Lieutenants (Hon. Sq. Ldr.) J. Valeriz, O.B.E., to R.A.F. Depot, Uxbridge, 19/7. A. A. Townsend, M.B., to Marine Aircraft Experimental Estab., Felixstowe, 24/7. B. F. Haythornthwaite, M.B., B.A., to R.A.F. British Hospital, Iraq, 29/6. J. G. Russell, M.B., B.A., to H.Q., Iraq, 29/6.

Flying Officers R. G. Freeman, to R.A.F. Depot, Uxbridge, 19/7. J. O. Priestley, D.M.R.E., and J. Twohill, M.B., to Research Laboratory and Medical Officers' School of Instruction, on appointment to S.S. Comms., 13/7. C. J. MacQuillan, M.B., B.A., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 2/7. H. C. Patterson, to Station Commandant, Basrah, 21/6. R. J. I. Bell, to No. 100 Sqdn., Spittlegate, 20/7.

STORES BRANCH.—Flying Officer W. F. Langdon, to Station H.Q., Northolt, 25/7.

ACCOUNTANT BRANCH.—Flight Lieutenant O. K. Griffin, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 5/7.

Flying Officers S. C. George, to Command Accounts Office, Palestine, 7/7. J. McL. Murray, to H.Q., Air Defence of Great Britain, Uxbridge, 16/7.

The Accident at Hinaidi.

An accident involving the deaths of six officers and men of the Royal Air Force, and a member of the Works and Buildings Department, occurred early on the morning of July 26, at Hinaidi. A Vickers Vernon crashed and collided with the store sheds on the Aerodrome at Hinaidi. The cause of the accident is unknown.

Those killed were:—Sq. Ldr. E. M. Pollard, Flg. Off. O. K. Stirling Webb, Flg. Off. R. C. B. Brading, Sjt. E. Kennedy, AC.1 H. L. Davis, AC.2 E. Whittle, and Mr. S. C. Inglis.

Other people involved in the accident were: Plt. Off. G. P. Mee, of 45 Sqdn., who was seriously injured, and AC.1 J. D. Henderson, who was unhurt.

AC. Whittle was killed while working in a shed into which the machine crashed.

Another Parachute Success.

On July 23, L-AC. Parrish, R.A.F., Manston, while flying over the town of Margate, lost control of his Service Avro. The machine crashed and was wrecked. Parrish descended safely by parachute in a field outside the town, about two miles from the spot where the aeroplane fell. He received minor injuries, and was taken to Manston Aerodrome Hospital.

The Service Mediterranean Cruise.

The two Supermarine Southampton flying-boats (two 450 h.p. Napier Lion engines each), which left Plymouth on July 1 on a cruise round the Mediterranean and are now returning to England from Alexandria, arrived at Corfu from Athens on July 20.

On July 22 they left Corfu at 08.00 hours for Malta.

The Flowerdown Inspection.

The Passing-Out Inspection of the aircraft apprentices entered in September, 1923, at the Electrical and Wireless School at Flowerdown, took place on July 22. This was the fourth passing out inspection at this school.

Group Captain R. Peel Roes, D.S.O., A.F.C., O.C. Flowerdown, reported that altogether there were 228 apprentices under training exclusive of those passing out. One hundred and ninety-eight were being trained as Wireless Operator Mechanics, 10 as Instrument Makers and 20 as Electricians.

He stated that the standard of discipline and drill of those passing out had been above the average and their health had been very good.

Their athletic qualifications had been exceptional and they had represented the Unit at Rugby, Soccer and Hockey. Also a number showed great promise at Tennis and Cricket. Eight of them were in the Unit Tug-of-War Team competing at Olympia. Several had also represented the Unit at the R.A.F. Athletic Championships. They had shown keenness in the Gymnasium and at the Rifle Range and some promised to be good gymnasts and marksmen.

Their educational standard had been high and the best of them were in every way comparable with the best of their predecessors. Elementary evening classes had been well attended and every apprentice had successfully operated wireless instruments in the air.

Of those passing out 14 have passed out as L-ACs, 33 as ACs, 29 as AC2s, and 4 only had failed to qualify.

A Cadetship had been offered to No. 36405 E. B. Hughes, who was also the winner of the Hyde-Thomson Memorial Prize.

The following had been retained at the school for the Advanced Course with a view to their passing out as Corporals:—No. 36426, Mott, A. J.; No. 36399, Corden, W.; No. 36418, Jukes, A. S.; and No. 36425, Lea, J.

A. J. Mott had won the Prize offered by the Air Ministry for the aircraft apprentice obtaining the Highest Aggregate Marks in all sections. L. E. Farrell had obtained the Highest Marks in Technical Subjects, and R. A. Godfell had won the Prize for the Highest Marks in Educational Subjects.

Air Vice-Marshal Sir Philip Game, K.C.B., D.S.O., p.s.c., Air Member for Personnel, said that he was particularly glad to hear that the standards of discipline and drill had improved, as he saw at the March Past. Since he had joined the Service thirty-one years before ideas of discipline had changed. We were no longer satisfied with the discipline of punishment but looked for the higher discipline of self-respect and esprit de corps and it was for this that all officers and n.c.o.s of the R.A.F. should strive.

He congratulated the two apprentices who had been recommended for Cadetships and was sorry that one of them had failed in his Medical Examination. He also congratulated those selected for training as Corporals, which was the next highest distinction.

He emphasised the importance of the wireless and electricity trades in assuring efficiency and rapid communication for aircraft. He said that the apprentices got a thorough grounding in their trade at Flowerdown and he looked to their being really skilled men when they had had practical experience, so that they would be thoroughly good craftsmen while in the R.A.F. and would readily find jobs when they passed to civil life.

While they were at Flowerdown they could be looked after individually, but after leaving it was up to them to maintain and improve their skill and prospects. The born mechanic might not get a great deal of operating and the man who shone as an operator might get little mechanical work so they must try and keep their hand in at all the various branches in their spare time, and they could always ask for a transfer from one branch to another if they felt that they were losing their skill in any particular branch. They must help themselves and they should regard their officers and their education officer as friends.

He warned those who had passed out as L-ACs not to imagine that they knew everything. No school could turn out the fully practical mechanic. Experience only came with time. He advised them therefore to seize every opportunity and not to be above learning from anybody who had practical knowledge even if he was not an L-AC.

The Royal Tournament.

The Foils Championships of the four Services were decided at Olympia on July 14. The R.A.F. Championship was won by Flg. Off. F. C. Chalmers.

The Inter-Services Championship was won by Lieut.-Cdr. Kershaw, R.N. The R.A.F. was not represented, as Sq. Ldr. Sherriff, M.C., who won it last year, is still in hospital as the result of a flying accident.

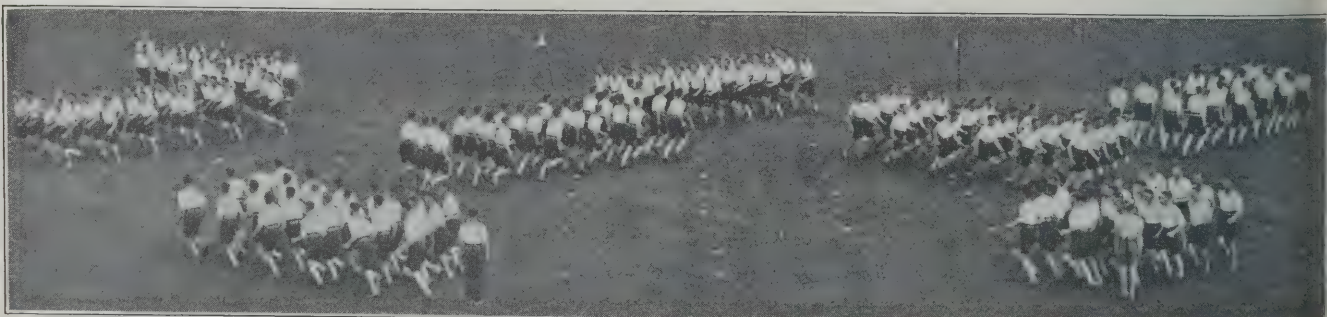
Fencing:—On July 16, Flg. Off. F. C. Chalmers, of No. 9 Bombing Squadron, Manston, won the Royal Air Force contest for the Epée versus Epée Individual Championship.

In the Inter-Services Championship Flg. Off. F. C. Chalmers was bracketed third with Lt.-Cdr. C. A. Kershaw and Lt.-Cdr. W. C. T. Eyres, R.N., and Flt. Lt. G. M. Knocker, of the R.A.F. Cadet College, had sixth place.

Sabre v. Sabre, Individual Service Championships: R.A.F.:—Cpl. W. R. Hancock.

Sabre v. Sabre (Phase 4), Inter-Service Competition: Bracketed sixth, Flg. Off. F. C. Chalmers and Cpl. W. R. Hancock.

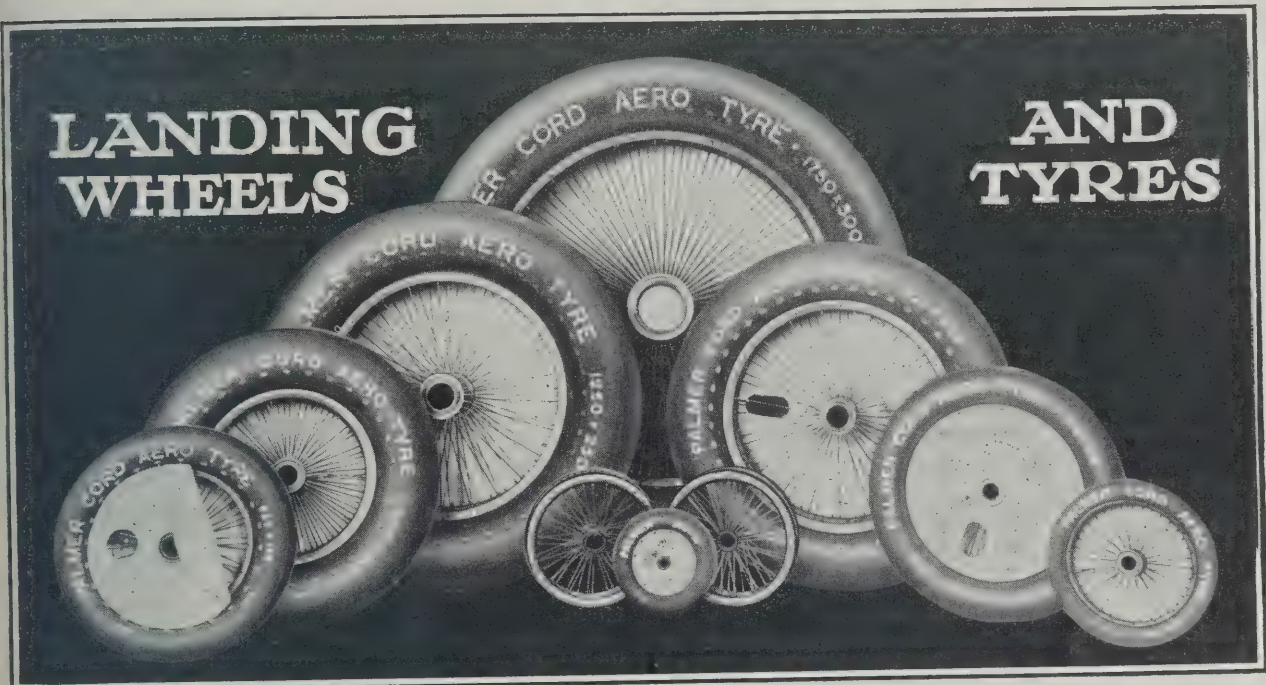
Flg. Off. F. C. Chalmers was awarded the King's Certificate



THE ROYAL AIR FORCE AT OLYMPIA.—Part of the Drill Display by 200 Recruits from the R.A.F. Depot at Uxbridge, which has taken place at the Royal Tournament. The evolutions shown in the above illustration are carried out at the double and were suggested to Flt. Lt. Wombwell, O.B.E., by the musical drive of the Guns.



PALMER



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 200 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 76 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
Grease gun equipment is now a standard fitting on all wheels.

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for all-round skill-at-arms, having been in the first six of the Inter-Service Pools in foil, épée, and sabre.

Sabre v. Sabre, Individual Service Championships: R.A.F.:—Cpl. Lever; Officers' Medal, Flg. Off. A. A. Jones. Bayonet Team Combats, Individual Service Championship Finals:—Royal Air Force, Lee-on-Solent.

Tug of War:—Royal Air Force Inter-Unit Championship Final (110 st.):—R.A.F., Gosport, beat R.A.F., Flowerdown, by two pulls to none. Time—first pull, 1 min. 50 secs.; second pull, 1 min. 5 secs.

Royal Air Force Inter-Unit Championship Final (130 st.):—R.A.F. Base, Gosport, beat R.A.F., Manston, by two pulls to nil. First pull, 40 secs.; second pull, 59 secs.

Inter-Services Championship Semi-Final (130 st.):—The Army beat the R.A.F. by two pulls to nil.

Bisley.

The following distinctions were won by the Royal Air Force during the shooting competitions held at Bisley on July 17:—

Badge and £5: Sjt. Cresswell, R.A.F.
Badge and £3: 2nd Lt E. L. Hopkins, late R.A.F.; Flt. Lt. R. S. Greenslade, R.A.F.; and F-S. R. J. Williams, R.A.F.

Nuri Pasha Al Sa'id.

The Air Council entertained Nuri Pasha Al Sa'id, C.M.G., D.S.O., Chief of Staff of the Iraq Army, at luncheon at the Savoy Hotel on Thursday last (July 22). Sir Samuel Hoare, Secretary of State for Air, presided. Those present were:—Jafar Pasha el Askeri, C.M.G., Major-General A. C. Daly, C.B., C.M.G., Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., Air Commodore C. L. N. Newall, C.M.G., C.B.E., A.M., Air Commodore A. M. Longmore, C.B., D.S.O., and Group Captain C. S. Burnett, C.B.E., D.S.O.

A British Defeat?

According to a report in *The Times* some British seaplanes which are visiting Dalmatia, presumably attached to a British Naval Squadron which is at present in Adriatic waters, took part in a race with some Yugo-Slav Naval flying-boats in the Gulf of Cattaro, on July 25, and the Yugo-Slav flying-boats won.

The Archie Gunners.

Anti-aircraft gunnery practice has been in progress during the past week in the neighbourhood of Minehead, Somerset, the units employed being:—The 26th (London) Air Defence Brigade, of which Colonel Thomson is the Brigade Commander and Major R. H. Pipon Brigade Major. The batteries are the 154th, 155th and 156th. The 155th is made up of employees at the Vickers works, and is known as the Vickers Battery. The 156th Battery is raised in Barking, and is known as the Barking Battery,—which seems a good name, though one hopes that it can also bite.

Some preliminary work was done with full charges and on July 21 practice was carried out in height-finding and the use of various anti-aircraft gunnery instruments, with the aid of aeroplanes flying above a certain limited altitude the shells being fuzed to burst at a range of 5,000 feet.

Later full charges were used against "sleeve" targets towed behind an aeroplane at the end of a wire 2,000 feet long. One gathers that with inexperienced gunners 2,000 feet is by no means too large a margin for the aeroplane which does the towing,—some pilots say that they would prefer to have the guns firing directly at them.

This seems to be the only possible method of giving gunners actual practice against a moving target. There seems to be no other means by which it is possible to practise correction by means of flank observers or by observing the height of shell bursts with height-finders. But one thinks that something might be done with kite-balloons towed by destroyers with mock-up aeroplanes of life size slung below.

Practice has also been done in the identification of aircraft and in co-ordinating fire of two or more gun stations.

A CIRCUIT OF THE NORTHERN CAPITALS.

On July 17 Commandant Weiss and Sergeant Latapie, of the 34e Régiment d'Aviation, left Le Bourget on a Bréguet XIX biplane (450 h.p. Lorraine-Dietrich engine), and arrived at Copenhagen six hours later.

On July 18 they flew from Copenhagen via Oslo to Stockholm.

On July 19 they left Stockholm at 04.00 hours, they flew via Helsingfors to Reval.

On July 20 they flew from Reval to Riga.

On July 21 they flew from Riga, via Kovno and Warsaw, to Prague, and on July 22 they covered the distance from Prague to Paris, 560 miles, in 6 hours 20 mins.

The total distance represents 3,375 miles, which was covered in 31 hours 40 mins. flying time.

TEHERAN—MOSCOW.

On July 24, M. Moiseff flew from Teheran to Moscow, a distance of 1,937 miles, in 20 hours, with three intermediate landings.

THE DE HAVILLAND HERCULES.

The De Havilland Company has issued a notification that the D.H.66s, the three-engined commercial machines which are now being built for Imperial Airways Ltd. for use on the Cairo-Karachi service, will be known by the type name of Hercules.

The name seems appropriate, for the various tasks which were put upon the legendary hero were mere trifles compared with the job which the De Havilland Hercules will have in making an air line pay between Egypt and India. Apart from which, the Hercules will have to be something of a weight-lifter to carry enough petrol for its journey across the desert, even with an intermediate landing, if it is going to carry a paying load.

However, the De Havilland aircraft have always been so successful that one has confidence in the machine's ability to do the job for which it was designed. And the Jupiter engines with which the type is to be fitted have proved their reliability beyond question.

The only objection one has to the name is purely on the point of euphony. It sounds so awkward to talk about the five Herculesees which are being built for this job.

In connection with the naming of the D.H.66 a Prize Competition was held by *Meccano Magazine*, that extraordinary publication which is probably doing more to educate the youth of to-day in everything of a practical nature than anything else which appears in print. Readers of the magazine were asked to submit appropriate names and from the names suggested the de Havilland Company chose the one which the directors like best.

Seven *Meccano* readers suggested the name "Hercules," and as the first postcard received with that name on it came from Mr. E. F. Hope-Jones, of Common Lane House, Eton College, he has been awarded the first prize, which is a fifty-mile flight out and home from the Stag Lane Aerodrome or two-and-a-half hours of flying lessons on a Moth, whichever he prefers. The second postcard with the name "Hercules" was sent by Mr. M. V. Longbottom, of Waterloo, Liverpool, who is thus entitled to half-an-hour's flying lesson on a Moth.

Five other readers suggested the name "Hercules," and to them Consolation Prizes have been awarded, these being joyrides in Moths in the immediate neighbourhood of Stag Lane. As three out of the five come from Manchester, Bedford and Folkestone respectively their joyrides are likely to be expensive in railway fares.

Five similar Consolation Prizes have also been awarded to readers of *Meccano* who submitted the word "Dragoman" as a name for the D.H.66s. Personally one rather prefers the name "Dragoman" seeing that the D.H.66s are intended for the Cairo-Karachi route and will conduct quite a number of people for their first journey to the East. But perhaps the de Havilland Company objected to the syllable "drag" in the name, seeing that the aim of the designer is always to obtain a high proportion of lift over drag. And de Havilland machines have always been famous for their clean lines and consequent absence of drag.

MAILS.

In his speech on the Post Office Estimates in the House of Commons on July 10, the Postmaster-General said:—

The air mail network in Europe continues to expand. If hon. Members will look at the new air mail leaflet, which is now to be found in post offices, I think they will be surprised at the number of extended facilities which are now available for the postage of letters by air. I should like to call particular attention to the latest of the new services, which is that to Marseilles, by the use of which it is now possible to post by air mail for the Indian mail very early on Friday morning, instead of at six o'clock on Thursday evening—a clear saving of about 12 hours. A letter posted in London before, I think, six o'clock on Friday morning—the particulars are obtainable at the post offices—for the air mail, will get to Marseilles in time to catch the Indian mail on the Saturday.

[Considering that the ordinary mailing time for India is 6 p.m. on Thursdays in London, without any extra expense, or the risk of loss or delay consequent upon air transport, or the risk of the letter falling into the hands of the French postal authorities during transit, those who wish to communicate with India would be well advised to post their letters in time for the ordinary mail.

To those who leave things to the last minute, but do not want to visit the nearest pillar-box before 6 a.m., there is a very sound motto (of Naval origin), "He prospers who burns in the morning the letters he wrote overnight.—

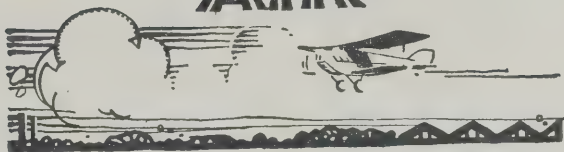
C. M. MCA.]

WARSAW—PARIS.

On July 20 Lieut. Thoret flew from Warsaw to Paris, a distance of 906 miles, without a stop, in 10 hours 10 mins. on an Albert-Tellier light monoplane (40 h.p. Salmson engine). He used approximately 24 gals. of petrol, which gives a fuel consumption of roughly 37½ miles to the gallon.

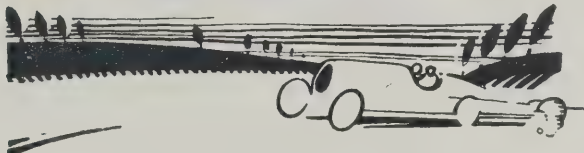
Supreme

IN THE
AIR



King's Cup Air Race won on PRATTS by De Havilland (Moth) 27/60 h.p. "Cirrus" engine, piloted by Capt. H. S. Broad, entered by Sir Charles Wakefield Bart.

ON
LAND

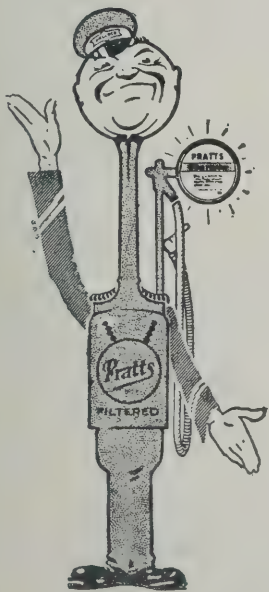


24 Hours' British Built Bentley Record (3 litre class) made on PRATTS.

AND
WATER



Duke of York's Trophy (Motor Boats) won on PRATTS by Miss M. B. Carstairs' "Newg."



Pratts

BEST ON TEST

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE YORKSHIRE AIR PAGEANT.



THE YORKSHIRE PAGEANT.—The array of Moths and Avros on the Aerodrome.

On Saturday, July 24, there took place at Sherburn-in-Elmet aerodrome the first Air Pageant organised by the Yorkshire Aeroplane Club. The choice of date was unfortunate in that it clashed with that chosen by the fourth Test Match at Manchester and therefore bad weather was inevitable.

On the Friday evening, although the weather was overcast, the flying conditions were good and a number of the competitors had arrived. By 20.00 hours a dozen machines were in the spacious Yorkshire Club sheds and the Organising Committee were doing their best to get everything ready for the morrow and making everybody thoroughly at home. The aerodrome at Sherburn is an excellent one, but is unfortunate in its inaccessible situation. In accommodation, size and surface it is an ideal instructional aerodrome. The three blocks of three permanent sheds belong to somebody's wagon works [Mr. Bridgman's forgettery, and not an editorial desire to suppress free advertisement, is responsible for the omission of the name.—E.D.], but the owners have generously allowed the Yorkshire Club the use of one block of three, and in these three there would be almost enough room for the Club to carry out flying instruction under cover in bad weather.

Leeds is some fifteen miles away and there is no communication except by road. The Club had asked the local charabanc companies to run a 'bus service out from Leeds, but these people, not knowing what an air pageant was, gave little or no assistance.

On Saturday morning some more machines arrived and by midday everything pointed to a very successful meeting.

THE COMPETITIONS.

The machines present were:—Two Yorkshire Club Moths; two London Club Moths; three Lancashire Club Moths; one Newcastle Club Moth; the de Havilland Co.'s demonstration Moth, on which Mr. Broad had won the King's Cup and on which Sir Sefton Brancker had flown up on the Friday, piloted by Mr. Broad; Sir John Rhodes' Moth; Mr. Kittell's Moth; two Renault-Avros, one Mono Avro and a Blackburn Kangaroo from the Blackburn Co.'s R.A.F. Reserve School at Brough; one Renault-Avro from the Lancashire Club; and the Avro Gosport sent over by A. V. Roe and Co., from Manchester.

At about 14.00 hours a short burst of sunshine caused everybody to feel pleased with life. A few early spectators had arrived and all the roads leading to Sherburn were bringing people in all manner of transport. The last touches of paint had been applied to the "fort," built by Mr. Barraclough and one assistant—a very creditable piece of work. And the machines were taxied out to the northern boundary of the aerodrome.

The row of ten Moths and four Avros, parked wing-tip to wing-tip, looked very impressive.

Promptly at 15.00 hours Mr. Broad took off and gave a short demonstration of low looping, rolling and slow flying on G-EBMO, the red-

and-white King's Cup winner, which drew loud applause from the crowd which now numbered about 5,000.

The first event was a race for Light Aeroplane Club Instructors. There were six entrants: Messrs. A. M. West, Yorkshire Club; F. G. M. Sparks, London Club; J. D. Parkinson, Newcastle Club; T. N. Stack, J. J. Scholes and J. C. Cantrill, Lancashire Club; naturally all on Moths.

The course was round a water-tower just outside the aerodrome, round the chimney of the Olympia Works at Selby and the chimney of Smith's Brewery, Tadcaster, and back to the aerodrome, a distance of 25 miles. At this time the wind was strong and gusty and the take-off of the six Moths in line and fairly close together was not a comforting sight. The difficulties of a simultaneous take-off were accentuated as all the machines had to make a turn in a bunch round the water-tower.

However, everything passed off happily, although there was a certain amount of breath-holding among a number of people. After a quarter of an hour's wait the first three machines were seen approaching from Tadcaster, at no feet altitude, hedge-hopping, and at times disappearing from sight behind hedges and trees.

Mr. Parkinson was just in front of Mr. Sparks, with Mr. West not far behind, and the three Lancashire Moths, flown by Messrs. Stack, Scholes and Cantrill in this order, brought up the rear, flying somewhat higher than the first three.

The result and times for the race were: 1, J. D. Parkinson, 18 mins. 37 secs.; 2, Mr. F. G. M. Sparks, 18 mins. 38 3-5 secs.; 3, Mr. A. M. West, 18 mins. 41 secs.

The first prize was a cup presented by Mrs. R. W. Kenworthy, to be held for one year, also £10 presented by A.D.C. Aircraft Ltd., and a replica of the cup presented by the de Havilland Aircraft Co. Ltd. The second prize was a gold medal presented by Messrs. Sweeney's of Bradford.

Just as this event was finishing Mrs. Lynn arrived from London on her pale blue Moth, this arrival bringing up the number of D.H. Moths present to a dozen.

The second event was an Inter-Club Relay Race for a cup presented by Mr. Stuart Hirst.

Four teams were entered, the teams being (i) London: N. Jones, Major K. M. Beaumont and F. G. M. Sparks on G-EBNP; (ii) London: Mrs. Lynn, G. H. Craig and W. Hay on G-EBNY; (iii) Yorkshire: A. M. West, E. B. Fielden and R. W. Kenworthy on G-EBNN; and (iv) Lancashire: J. Scholes, A. Goodfellow and J. Cantrill on G-EBLR.

Unfortunately the organisation of this race was bad. Each team used one machine and on landing, after flying round a four-mile course, the machines had to taxi back to the starting line to change pilots. At the end of the first lap the four machines landed almost simultaneously and in endeavouring to return to the line in the least possible time everything became hopeless confusion.

A Lancashire Moth, piloted by Mr. Scholes, and a London Moth, flown by Mrs. Lynn, did what everyone expected would happen, and collided head-on. This was not due to negligent piloting or taxiing, but to over-zealous man-handling by the ground staff. One of the Lancashire ground staff grabbed Mr. Scholes' wing-tip and swung the machine round into Mrs. Lynn's machine which was taxiing alongside.

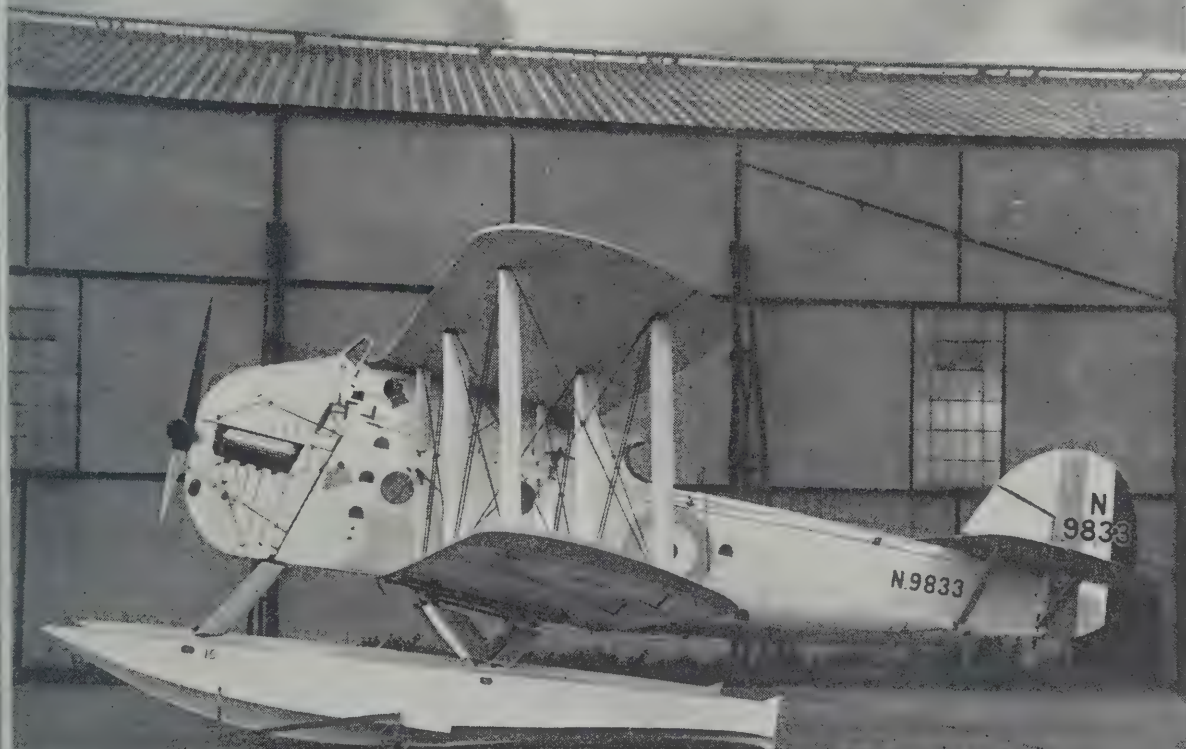


THE YORKSHIRE PAGEANT.—Moths and Avros with a Blackburn Kangaroo in the background.

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THE YORKSHIRE PAGEANT.—The start for the Open Handicap, showing the three Renault-Avros (two from Brough and one from Manchester) just starting. The farthest machine, flown by Mr. Neville Stack, of the Lancashire Aero Club, was the winner.

Fortunately little damage was done. The only noticeable damage was a broken leading edge on the Lancashire machine and a broken flying-wire on the London machine. In the meantime the remaining London team and the Yorkshire team were carrying on, and having more room to manoeuvre on the ground by the elimination of two teams no further damage was done. The Yorkshire team eventually won with London second and last.

At about this time the weather broke, but in a lull in the rain the third event was started.

This was an Open Handicap Race for a first prize of £20 presented by the Blackburn Aeroplane and Motor Co. Ltd., and £10 presented by the de Havilland Aircraft Co. Ltd. as the second prize. Owing to the impossibility of being everywhere at once, and to the rain, which increased in intensity, it was difficult to gather either the method of starting or the handicap times or the actual pilots competing on the various Club Moths.

There were four Avros and five Moths lined up on the starting line. The Avros were piloted by Mr. Loton, Mr. Stack, Mr. Woodhead and Mr. Norman Blackburn, and among the Moth pilots were Mr. Broad and Mr. Lamplugh.

The course for the race was the same as for the Club Instructors' Race. On the first leg Mr. Broad's engine seized and he was forced to land in a cornfield near Selby. The machine turned over and was somewhat damaged, but neither Mr. Broad nor his passenger, Mr. W. Hay, a member of the London Club, were hurt.

The finish of the race was made in heavy rain. Mr. T. N. Stack, on the Lancashire Club's Renault-Avro, being first in 18 mins. 20 2-5 secs., with Mr. J. D. Parkinson, on the Newcastle Club Moth, second in 18 mins. 59 4-5 secs, and Mr. Lamplugh, on the London Club Moth, third.

The next event, which eventually turned out to be the last, was a Private Owners' Handicap Race, for a cup presented by *The Yorkshire Evening News*, over the Sherburn-Selby-Tadcaster course. The two entrants for this were Sir John Rhodes, Bt., and Mrs. Lynn, both on their own Moths. Both took-off together in the rain and Sir John Rhodes retained the lead on the 25-mile course until a few hundred yards from the finish, when Mrs. Elliott Lynn stepped on the gas and won by 9 1-5 secs. She certainly had the faster machine, but held back in order to follow the other machine round a course she did not know.

While these two machines were away Mr. Bert Hinkler went up on the Avro Gosport and gave a delightful exhibition of flying, entirely within the precincts of the aerodrome, but not over the crowd and not high enough to give anyone a crick in the neck.

The rain, which had been fairly persistent but not enough to drive the enthusiastic crowd to cover, now burst into full song and the whole sky seemed to be full of solid water. The Blackburn Kangaroo, which had come over from Brough, turned itself into an umbrella and offered voluminous if precarious shelter for quite a crowd. However, in time those sheltering under machines were forced to run for the sheds and the rest of the afternoon was spent therein.

It was decidedly bad luck for the Yorkshire Club that the Pageant, which looked like being such a success, should

suffer the fate of being drowned out. The crowd may have been small but taking into consideration the inaccessibility of the aerodrome and the various counter-attractions it was certainly a good one and full of enthusiasm.

The events which were washed out were a Bomb Dropping Competition, a Parachute Descent, an exhibition of Stunt Flying by Mr. Broad, the Bombing of Fort Barraclough and the Passenger Flying.

Although the Lancashire Club hold the honour of running the first Club Display, the Yorkshire Pageant can certainly be claimed as being the first representative Inter-Club Meeting, and, except for the Relay Race confusion, and the bad broadcasting of information concerning the races and results, everything was done extremely well.

The programme was poor. In the first place the events were not run in the order given in the programme, and secondly there were no details as to the competitors or the lettering or colouring of the various Club machines, with the result that it was impossible to expect the crowd to work up anything more than just ordinary interest.

The Blackburn Aeroplane and Motor Co. Ltd., and the North Sea Aerial and General Transport Ltd., which is responsible for the R.A.F. Reserve School at Brough, and A. V. Roe and Co. Ltd. deserve the thanks of the Club.

Among the visitors present were Sir Sefton Branccker, Brig-Gen. Festing, Mr. Robert Blackburn and Mr. Charles Blackburn, of the Blackburn Co., Mr. John Lord and Mr. Dobson, of A. V. Roe and Co. Ltd.

The Pageant Committee of the Yorkshire Club deserve a mention for the good work they did in organising an excellent show:—Messrs. R. W. Kenworthy (Chairman), D. D. Little, H. S. V. McCalman, M. B. Lax, G. H. Barraclough, and J. F. Barnes, the energetic Club Secretary.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending July 24.

The total flying during the week was 23 hrs. 25 mins.

The following members had flying instruction:—L. G. Sykes, M. P. Susman, R. G. Edkins, Col. Farfan, A. L. A. Petty, R. C. Woodcock, D. E. Martin, E. W. Russell, Lady Bailey, E. K. Blyth, A. J. Richardson, P. O. A. Davison.

The following members flew solo:—Sq. Ldr. M. E. A. Wright, N. Jones, Capt. Lamplugh, Major K. M. Beaumont, G. H. Craig, W. Hay, Mrs. Elliott-Lynn, N. J. Hulbert, E. L. O. Baddeley, Capt. W. Roche Kelly, A. R. Ogston, A. Lees.

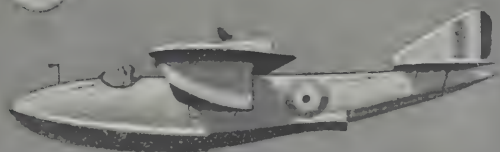
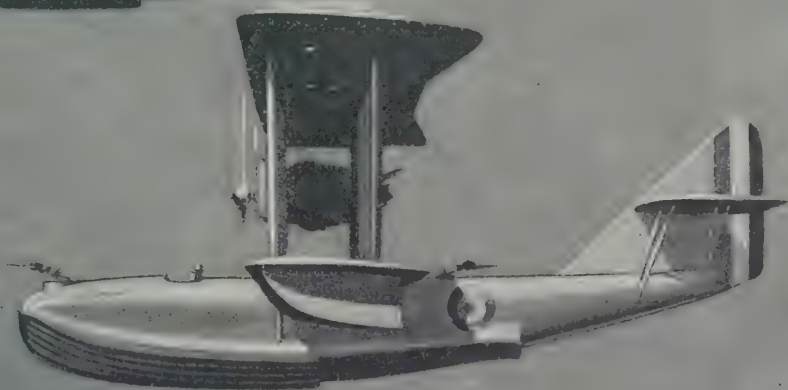
The following associate members had joy-rides:—B. D. Waugh, G. W. West, Miss Sykes.

The Club will be closed down on Friday, July 30, till Monday, Aug. 9, so as to enable the staff to have a short holiday.



THE YORKSHIRE PAGEANT.—The Crowd watching Mr. Bert Hinkler performing on the Avro Gosport.

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The Midland Aero Club.

Report for week ending July 24.

Very bad weather with high winds considerably restricted flying throughout the whole week, with the result that the total flying time was only four hours.

The following members had flying instructions:—C. Fellows, L. Goodway, R. L. Jackson, H. Smith, O. L. Richards.

Mr. G. Perry flew solo.

On Thursday, Col. Sheldermine, of the Air Ministry, visited the aerodrome in order to pass a number of members in their *viva voce* examinations for "A" Licences.

The Hampshire Aeroplane Club.

Report for week ending July 24.

The newly-formed Hampshire Aeroplane Club will commence flying activities at the Hamble Aerodrome on Saturday, Aug. 14.

The Club is receiving delivery of two de Havilland Moths on the Saturday previous, Aug. 7.

The Moths will be due to arrive at Hamble Aerodrome soon after 6 p.m. Members and their friends wishing to be present on the occasion of their arrival will be welcome.

On Wednesday of last week, Air Vice-Marshal Sir Sefton Brancker, C.M.G., D.S.O., Director of Civil Aviation, paid a surprise visit to Hamble, where he inspected the Club premises.

He was received by Mr. A. V. Roe, Vice-President of the Club, and, in the unavoidable absence of the chairman, by Mr. R. V. Perfect, Assistant Secretary, and Mr. R. H. Bound. Sir Sefton expressed pleasure with the commodious premises so ideally situated and prophesied a brilliant future for the Hampshire Aeroplane Club.

The Newcastle-upon-Tyne Aero Club.

Report for week ending July 25.

This has been again a week of wet weather and the total time flown during the week was only 21 hrs 55 mins., 12 hrs. 45 mins. on L.V. and 9 hrs. 10 mins. on L.N.

The following members flew under instruction, with Mr. J. D. Parkinson:—Mrs. Marcks, Miss Leathart, Col. Sir Joseph Reed, Messrs. J. D. Irving, J. Bell, M. G. Thirlwell, A. D. Bruce, F. Howard Phillips, Dr. H. L. B. Dixon, A. Bell, D. H. Sandilands, J. M. Campbell.

The following members flew solo:—Mr. C. Thompson, Mr. L. Smith, and Dr. Dixon.

Mr. Baxter Ellis flew with A. Bell as passenger and Mr. N. S. Todd flew solo. Mr. P. Forsyth Heppell flew with Mr. R. N. Thompson as passenger.

The following had joy-rides:—Mr. and Miss Stonehouse and the Rev. Mr. Stonehouse, Mr. Davis, Mr. Laidler and Mr. Bedson, Junr.

On Saturday, Mr. Baxter Ellis and Mr. Forsyth Heppell flew over Ponteland Rifle Range at the request of Mr. Howard Phillips, also a member of the Club, for the purpose of carrying out Infantry contact patrol exercise, etc., with Mr. Phillips's Battalion of the Northumberland Fusiliers. One of the exercises, it appears, was to instruct the Infantry regarding firing upon low flying aircraft, and it is learnt that one of the Pilots concerned, at any rate, felt that it would be interesting to know whether any of the Infantry had forgotten to unload their rifles after shooting at targets.

Mr. J. D. Parkinson flew in the Instructors' Race at Sherburn and also in the Open Handicap, the results of this racing are reported elsewhere.

The Yorkshire Aeroplane Club are to be congratulated upon the very thorough manner in which they arranged a very interesting programme and it was exceedingly unfortunate that such very bad weather was experienced. Though they are used to really severe weather conditions, the Newcastle representatives are quite satisfied that they have never experienced anything quite as wet as that through which they had to travel from Sherburn to Leeds.

There was great jubilation at Cramlington Aerodrome when the telegram announcing that Mr. Parkinson had won the Instructors' Race was received by the members present.

THE LIGHT AEROPLANE COMPETITION.

The following is the list of entries for the Light Aeroplane Competition which is to be held at Lympne from Sept. 10 to Sept. 18:—

The Blackburn Aeroplane and Motor Company Ltd.:—Blackburn Bluebird (Armstrong-Siddeley Genet).

The De Havilland Aircraft Company Ltd.:—D.H. Moth (Armstrong-Siddeley Genet).

The Bristol Aeroplane Company Ltd.:—Bristol Brownie (Bristol Cherub).

The Royal Aircraft Establishment Aero Club:—(1) Hawker Cygnet (Bristol Cherub); (2) Sirocco Monoplane (Bristol Cherub).

Messrs. T. O. M. Sopwith and F. Sigrist:—Cygnet II (Bristol Cherub).

The Supermarine Aviation Works, Ltd.:—Supermarine light aeroplane (Bristol Cherub).

The Halton Aero Club:—Two-seater biplane (Bristol Cherub).

A. V. Roe and Company Ltd., Manchester:—(1) Avro Avian (Armstrong-Siddeley Genet); (2) Avro Avis (Blackburne Thrush or A.B.C. Scorpion).

The Cranwell Light Aeroplane Club:—(1) C.L.A.4 ("P" engine); (2) C.J.A.4 (Bristol Cherub).

Mr. H. W. Martin:—A.N.E.C. (Blackburne Thrush).

Mr. George G. Parnall:—Parnall Pixie III Monoplane (Bristol Cherub).

The Seven Aeroplane Club:—(1) Monoplane (A.B.C. Scorpion); (2) Biplane (A.B.C. Scorpion).

From this it will be seen that with the exception of the Avro Avian and the A.N.E.C. all the Trade machines were

built a year or more ago, and that the real novelties are the outcome of private enterprise at the R.A.E., Halton and Cranwell.

At the conclusion of the Competition a Race on handicap will be held over a course of approximately 100 miles. This race will be open to the aeroplanes taking part in the Light Aeroplane Competition which shall have accomplished at least 50 per cent. of the course in the Competition. A prize of two hundred guineas has been promised by the Society of Motor Manufacturers and Traders.

In the Grosvenor Challenge Cup Handicap, to be flown on Sept. 18, the aeroplane and engine must have been entirely constructed in the British Empire. The weight of the engine must not exceed 275 lbs. The entrant and pilot must be British subjects. The entrant must be an individual and not a company. The race is over a distance of approximately 100 miles.

THE R.Ae.C. AND AIR RACING.

At a meeting of the Racing Committee of the Royal Aero Club, held on July 20, it was decided not to hold the Aerial Derby this year, but to make an early announcement of the Aerial Derby for 1927.

It was further decided that for 1927 the Race should be a Scratch Race.

It was decided that the Race for the Grosvenor Challenge Cup should be over a course of 100 miles, and that the circuit should be reduced to not more than 10 miles.

It was further decided that the Handicap should be on a time allowance basis on the known performances of the machine.

It was decided to hold a Race Meeting at Bournemouth on Aug. 21 and 22, and a sub-committee was appointed to draw up the programme of events.



THE YORKSHIRE PAGEANT.—Two of the Lancashire Moths performing. The fort, intended to be bombed, was eventually submarined owing to the rain.

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The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 24; Tuesday, 27; Wednesday, 25; Thursday, 27; Friday, 27; Saturday, 27; Sunday, 13.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 87, passengers 754, freight 22 tons.

AIR UNION:

Paris—London: Machines 44, passengers 289, freight 12½ tons.

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Amsterdam—Rotterdam—London: Machines 25, passengers 123, freight 2 tons.

SABENA:

Brussels—London: Machines 12, passengers 75

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 6, passengers 6.

PRIVATE:

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Total number of trips by British Machines, 89, carrying 756 passengers. Foreign Machines 81, carrying 487 passengers.

Comparative Figures:

Week ending July 25:

Machines, 170; Passengers, 1,243; Crews, 215; Total personnel, 1,458.

Corresponding week, 1925:

Machines, 152; Passengers, 894; Crews, 213; Total personnel, 1,107.

Corresponding week, 1924:

Machines, 207; Passengers, 1,055; Crews, 255; Total personnel, 1,510.

Corresponding week, 1923:

Machines, 122; Passengers, 565; Crews, 212; Total personnel, 777.

Corresponding week, 1922:

Machines, 159; Passengers, 366; Crews, 251; Total personnel, 617.

Corresponding week, 1921:

Machines, 101; Passengers, 460; Crews, 126; Total personnel, 586.

Corresponding week, 1920:

Machines, 82; Passengers, 175; Crews, 104; Total personnel, 279.

Corresponding week, 1909:

Machines, 1; Passengers, 0; Crews, 1; Total personnel, 1.

Croydon Notes.

Having deserted the Croydon front for that of Vectis for the past fortnight, and knowing nothing of what has happened at Croydon in the interim except what one has gleaned from the daily press one will now proceed to write the Croydon Notes. One can approach the subject with more of the open or, perhaps, vacant, mind of the General Public.

One has often wondered what the General Public really thinks about Croydon and flying. Anyhow, from the daily press, one expects to find Croydon a fairly marvellous place when one gets back there.

First and foremost aeroplanes are perfectly safe and cannot crash. Slotted wings, auto-giros, flaps, anti-stall gears, etc., make an ordinary crash impossible. In fog, cloud, darkness and other afflictions, leader cables and directional wireless enable a pilot, whether he has flown before or not, to bring a machine in with perfect safety.

As all the giant air lines have three infallible engines housed in a central engine-room, with mechanics tending them all the time, forced landings are impossible, and should a pilot, through sheer *joie de vivre*, alight in the Channel, the machine will float for any length of time.

The scene at Croydon on any day is just like Charing Cross and/or Clapham Junction. The engines and airscrews, although both are always efficiently silenced, are roaring away with ear-splitting effect.

Thousands of passengers are jostling one another and porters with trolleys full of luggage are jostling the rest. Machines are arriving from and leaving for Karachi, Katmandu, Karlisle, Kew, Konstantinople and Kamden Town.

The Directors of Imperial Airways Ltd. are oosing wealth at every port. Captain Lamplugh, of Insurance fame, is a bloated millionaire, as there are no crashes to pay for. Mr. Jerry Shaw has turned Shell Corner into his private flat, and cannot make up his mind which of his Rolls-Royce super-cars to use to-day. Sir Charles Wakefield is giving away million-pound prizes for air racing, which Viscount Harold of Clifford Street, fresh from a banquet at the Savoy to celebrate his elevation to the peerage, airily puts in the pockets of his shot-gold plus fours for distribution as largesse to successful pilots.

Anyhow, seventeen years ago, on Sunday, M. Blériot flew the Channel, so we ought to be somewhere near this state of things. One must really go to Croydon and see.—G. D.

Mr. Cobham's Progress.

On July 20, Mr. Alan J. Cobham and Sjt. Ward, who are flying to Australia on a De Havilland 50J (Armstrong-Siddeley Jaguar), left Karachi and reached Bahawalpur.

On July 21 they flew to Delhi, but they were delayed for the rest of the day by the engine refusing to start, owing, it was found, to some rag having been sucked into the intake pipe.

On July 22 they flew to Allahabad.

On July 22 they flew to Calcutta.

On July 24 they flew to Akyab.

On July 25, seventeen years after Blériot flew the Channel, they flew to Rangoon.

The whole of the flight from Karachi has been made through terrific monsoon weather. Mr. Cobham, however, stated in an interview, that pilots who are used to English weather do not regard the monsoon as much more than nasty weather.

Mr. Cobham expects to reach Port Darwin on August Bank Holiday.—G. D.

The Pharisees of Harrogate.

A cutting from a local paper indicates that the Berkshire Aviation Tours have been having considerable difficulty with the local authorities at Harrogate. There was a time when Harrogate appeared to be quite keen about aviation and actually put up local prizes for competitors in the King's Cup Race, and one seems to remember that the Town did quite well in helping to make a success of the first Circuit of Britain in 1911. Apparently, since then, a wave of Pharisaism has swept over the place.

At a recent meeting of the Town Council the Mayor (Sir Ernest Bain) said that he would use any power he had to stop the aeroplane flights which were taking place. He said that he had had complaints from private persons and from nursing homes, and that the noise of traffic on the roads was bad enough without an additional noise in the sky. According to a local paper a member of the Council described the conditions on Sunday when passenger and exhibition flights were being given as "a disgrace to the town." The Council promised the Mayor full support in the effort to stop the flights, and it afterwards considered in committee the question of legality.

The result was that Mr. Stirling and Mr. Lelen of the Berkshire Company did nothing during the week-end. The Council owns the site from which the flying was to take place, and though it allowed the Berkshire people to have the field it forbade Sunday flying on the second Sunday of the firm's visit.

The correspondent who sends the cutting from which one has quoted says that the Council's action just about compares with the banning of Mr. George Robey in Birmingham.

Apparently the wonderful quiet of our modern road traffic, thanks to motor-cars and rubber tyres, has quite made people like the Councillors of Harrogate forget the horrible noise that used to be made by horse traffic. The clatter of iron-shod hoofs and iron-tyred wheels on macadamised roads and stone setts used to be far more distressing to the ear than any quantity of motor traffic on the road or in the air. If anyone doubts the statement let him go through any of the industrial districts where horse-drawn lorries are still used and judge for himself not only how noisy horse-drawn traffic used to be but how filthy dirty it was owing to the way in which the horses' hoofs threw up mud in wet weather.

Somebody ought to take these forgetful Pharisees down to some of the dock areas, and give them a chance of reminding themselves of what they have escaped.

Not only are these gentlemen forgetful but they are also inconsistent. For if the noise of the aeroplanes was so disturbing they ought to have prohibited flying on a week-day just as much as on a Sunday. And if they have any objection to Sunday flying as such they ought to have prohibited the flying on the first Sunday of the Berkshire Company's visit as well as on the second Sunday.

Modern Middlewich.

A story very different from the tale of Harrogate comes from the Berkshire Company's detachment at Middlewich, where Mr. Kent and Mr. Beck were flying.

On Sunday, July 18, heavy rain prevented much flying, but during the two clear hours of the day the two pilots managed to take up 140 passengers, which was remarkably good. On the previous Sunday Mr. Kent alone took up 98

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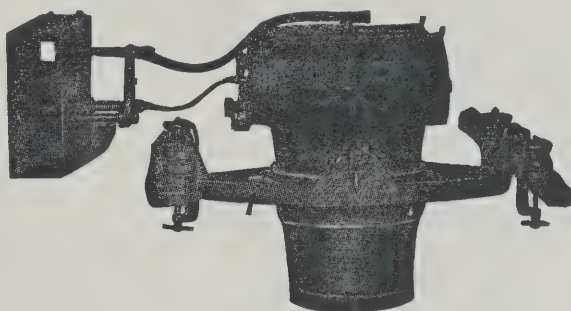
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passengers at Middlewich while Mr. Beck flew over to Coventry to give an exhibition flight over a large fête.

A most interesting feature about the firm's visit to Middlewich was the fact that the farmer from whom they rented their flying field wore an Air League badge and was commensurately keen on doing everything he could to help them. This is the first time the Berkshire Company have come across a member of the Air League in a business way, and they wish that they could find other members similarly situated who would be as good to them as was their landlord on this occasion.

Berkshire Work.

The Berkshire Aviation Tours continue their good work in making the people of this country air-minded. During the week-end July 10 and 11, at Crewe, Mr. Beck and Mr. Kent carried 450 passengers, although it was the latter end of the Crewe Works holiday, when people were away.

Mr. Stirling and Mr. Leleu, of the Berkshire Company, who were working at Harrogate, took up an equal number of passengers, so the firm's good work is progressing steadily.

A Change in Directorate.

In accordance with the terms of an agreement between Handley Page, Ltd., and the Aircraft Disposal Co., Ltd. (before the latter firm became A.D.C. Aircraft Ltd.), Lieut.-Colonel J. Barrett Lennard has retired from the directorate of Handley Page, Ltd.

The Supermarine Regatta.

Bad weather spoilt the Annual Regatta of the employees of the Supermarine Aviation Works Ltd., which was held in front of the Works on Monday evening, July 19. In consequence two of the events had to be postponed, but the others were carried through despite the high wind and rain and rough sea. The events which took place were the Galley and Gig Races. The course for the events was up and down the river for a distance of about two miles.

Eight crews were entered in the race for the Easton Challenge Cup for four-oared galleys. The crew of the winning boat were:—Stroke, J. Woodford; No. 3, L. Ford; No. 2, G. Jones; Bow, N. Jeanes; Cox, F. Bird.

The Itchen Sailing and Rowing Club won the four-oared Gig Race. This was one of the best races and was won by a very small margin.

The whole affair went with a swing from beginning to end and the manner in which it was carried out reflects great credit on the organising ability of the individual members of the Supermarine firm and it is easy to understand how with such keenness among all their workers, Supermarine workmanship is known throughout the World for its high quality.

The Hawker Engineering Co.'s Sports.

The Hawker Athletic Club held their Annual Sports at Kingston on Saturday, July 10, under excellent weather conditions. A large crowd witnessed some fine contests.

The Staff won the Aggregate Cup, the Tool Room the Sopwith Cup, and the Machine Shop the Sigrist Cup.

The most exciting event was the Invitation One Lap Walk. Mr. Fred Sigrist was first past the post, but was disqualified for (a) running, (b) boring, (c) using the "spinaker." So Capt. L. F. Peaty was declared the winner, with Messrs. F. S. Spriggs and H. Viney second and third.

At the conclusion of the racing, Mrs. F. Sigrist presented the prizes to the successful competitors.

Those present included Mr. and Mrs. F. I. Bennett, Mr. F. S. Spriggs, Flt. Lt. and Mrs. P. W. S. Bulman, Mr. and Mrs. S. Camm, Mr. and Mrs. E. C. Newman, Messrs. Mace, Seller, Chandler, Baigent, Sutton, Whitehorn (Hon. Sec.), etc.

PERSONAL NOTICES.

BIRTHS.

CODD.—On July 6, at "Howgill," Middlesmoor, Yorkshire, to the wife of T. A. Codd (late R.A.F.)—a son.

DAVY.—On July 20, at Manor Cottage, Stoke Mandeville, Bucks, to Dorothy (née Stewart), wife of Flt. Lt. K. M. Davy, R.A.F.—a daughter.

DE SALIS.—On July 13, at Riverside Cottage, Laleham-on-Thames, to Sara, wife of Capt. W. J. de Salis, D.S.C., R.A.F., retired—a son.

FFISKE.—On July 23, at Hillside, Brundall, Norfolk, to Mr. and Mrs. Geoffrey E. Fiske—a daughter.

GREGORY.—On July 14, at a nursing home, London, to Mollie, wife of Sq. Ldr. E. W. Gregory, M.C., R.A.F.—a son.

LOCK.—On July 18, at a nursing home, Broadstone, Dorset, to Cissie (née Bartlett), wife of Flg. Off. C. V. Lock, R.A.F.—a son.

PURCELL CLARKE.—On July 12, in the Minto Nursing Home, Murree, India, to Kathleen, wife of Flg. Off. L. H. Purcell Clarke, R.A.F.—a son.

STRAFFORD.—On July 23, at Alston Cottage, Ember Lane, Esher, to Edna, wife of Flt. Lt. S. C. Trafford, D.F.C., R.A.F.—a son.

FORTHCOMING MARRIAGES.

CAHILL—HARRY.—A marriage has been arranged, and will take place in September, between Flt. Lt. C. H. Cahill, No. 70 (Bombing) Sqdn., R.A.F., Baghdad, only son of Mr. and Mrs. Cahill, late of 41, Avenue Kléber, Paris, and Belfast, and Gwendolyn Margaret Harry, only daughter of the late A. Morgan Harry and Mrs. Morgan Harry, of Meadhurst, Eastbourne.

CHAMPION DE CRESPIGNY—USHER.—The engagement is announced between Sq. Ldr. Hugh Vivian Champion de Crespiigny,

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M.C., D.F.C., R.A.F., son of Mr. and Mrs. Philip Champion de Trespigny, of Melbourne, Victoria, Australia, and Sylvia Ethel, daughter of the Rev. Robert and Mrs. Usher, of Fovant Rectory, Salisbury, Wilts

STRATFORD TUKE-JOHNSTONE.—A marriage has been arranged between Flg. Off. Athol George Stratford Tuke, only son of Lt-Col. F. Stratford Tuke, D.S.O., R.A., and Mrs. Stratford Tuke, and Betty, elder daughter of Mr. and Mrs. William Ynile Johnstone, of Cotton House, Westgate-on-Sea, and granddaughter of the late Mr. E. Thompson, of Marlborough.

MARRIAGES.

INSALL-YATES.—On July 22, at the Parish Church, Berkhamsted, by the Rev. W. C. Stainsby, assisted by the Rev. D. F. Stephens, sq. Ldr. Gilbert S. M. Insall, V.C., M.C., eldest son of Mr. and Mrs. G. J. Insall, of Sevington, Kent, to Olwen Scott, only daughter of Mr. J. A. Yates, Indian Educational Service, and Mrs. Yates, of Bangalore, India, and Cranham, Berkhamsted.

JONES-TATHAM.—On July 20, at Carrington Church, Nottingham, by the Rev. E. J. Bardsley, M.A., Mr. Leslie Jones, R.A.F. Reserve, eldest son of Mr. and Mrs. J. A. Jones, The Firs, Olton, to Nora, younger daughter of Mr. and Mrs. Allen Tatham, Magdala Road, Nottingham.

SKINNER LAW-WORSLEY.—On June 30, very quietly, at St. Mary's Parish Church, Bexley, by the Vicar, Rev. Charles Moore, R.N., Rev. John Talbot Skinner Law, M.A., R.A.F. (retired), son of the late Benjamin Law, M.A., Barrister-at-Law, to Mabel Milne Worsley, widow of Lieut. Reginald Erie Milne Worsley, R.F.C., and daughter of the late Stephen Mesnard.

TENNANT-DUFF.—On July 17, Lieut-Col J. E. Tennant, D.S.O., M.C., to Victoria Maud Veronica, only daughter of Lady Juliet and the late Major Robin Duff.

DEATHS.

BRADING.—On July 26, at Hinaidi Aerodrome, Baghdad, as the result of a flying accident, Flg. Off. R. C. B. Brading, D.F.C., of the Station Headquarters, Basra.

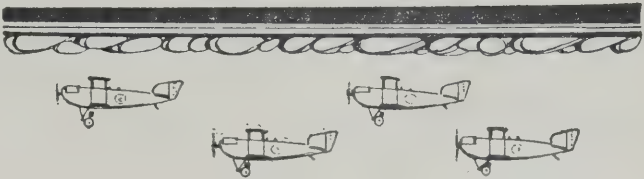
DAVIS.—On July 26, at Hinaidi Aerodrome, Baghdad, as the result of a flying accident, AC.1. H. I. Davis, of 45 Sqdn., Hinaidi.

KENNEDY.—On July 26, at Hinaidi Aerodrome, Baghdad, as the result of a flying accident, Sjt. E. Kennedy, of No. 30 Sqdn., Hinaidi.

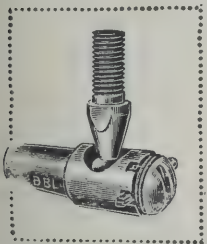
POLLARD.—On July 26, at Hinaidi Aerodrome, Baghdad, as the result of a flying accident, Sq. Ldr. E. M. Pollard, of No. 6 Armoured Car Co., Hinaidi.

WEBB.—On July 26, at Hinaidi Aerodrome, Baghdad, as the result of a flying accident, Flg. Off. O. K. Stirling Webb, of 45 Sqdn., Hinaidi.

WHITTLE.—On July 26, at Hinaidi Aerodrome, as the result of a flying accident, AC.2. E. Whittle, of No. 1 Sqdn., Hinaidi.



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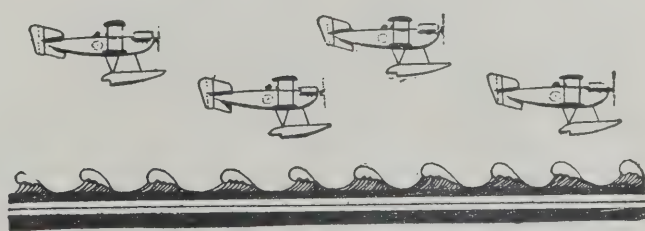
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THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

Vol. XXXI. No. 5.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

"SOME ENTERPRISE
THAT HATH A STOMACH IN 'T.'"—(SHAKESPEARE: *Hamlet*.)



A FAMILY AFFAIR:—Major Hereward de Havilland arriving at Longreach, the Headquarters of the Queensland and Northern Territory Aerial Services Ltd. (Qantas), on May 25, 1926. He came in a D.H. 50 (Puma engine) from Charleville, the railhead, to inspect the Australian version of the D.H. 50 which is being built under license, with Australian materials, by the Qantas, whose chief is the enterprising Mr. Hudson Fysh. The Qantas Co. had, up to May last, flown 457,869 miles without injury to personnel or passengers.



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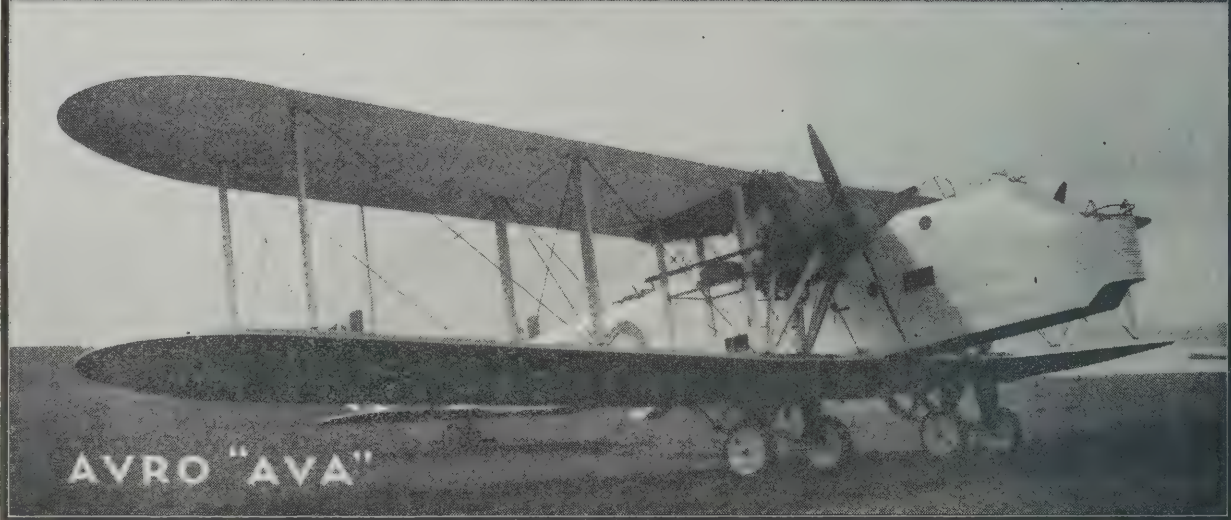
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AUG. 4,
1926.

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No. 5.

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ON THE KING'S GIFTS.

On July 27 the Royal Aero Club held a Banquet at the Savoy for the dual purpose of celebrating the honour of knighthood conferred by His Majesty the King on its former Chairman, Mr. Frank McClean, and presenting prizes in connection with the King's Cup Race to the winners. His Grace the Duke of Sutherland, President of the Royal Aero Club, was in the Chair and did his duty with all his accustomed charm and ingenuousness.

After the usual loyal toasts the Duke presented the King's Cup to Sir Charles Wakefield, the entrant of the winning Moth, together with a cheque for £100, remarking that the money would soon be coming back to the Club. Probably it will, but it will not be the same money, as will be seen hereafter.

Incidentally one imagines that the 1926 King's Cup is becoming quite worn with being presented and re-presented. First of all His Majesty the King presented it to the Royal Aero Club, then the Duke of Sutherland presented it to Mr. Broad at Hendon, directly after he had won the Race. Then Mr. Broad, as its temporary possessor, presented it to Sir Charles Wakefield at the de Havilland party at Prince's the other day. And now the Duke of Sutherland has re-presented it to Sir Charles Wakefield.

Perhaps one had better explain that the King's Cup goes to the entrant of the machine and not to the pilot. That is why the Cup belongs to Sir Charles Wakefield and not to Mr. Broad. Still, Mr. Broad did not do so badly, as will also be seen hereafter.

Thereafter the Duke presented £75 to Captain Peter Acland, of Vickers Ltd., as the entrant of the second machine, the Vickers Vixen, and £50 to Colonel Darby, of A.D.C. Aircraft Ltd., as the entrant of the third machine, the A.D.C.-Martin-

syde. Also a cheque for £100 was presented to Sq. Ldr. Jones for doing fastest time on the last-named machine.

Silver tankards were also presented to Sq. Ldr. Jones, Mr. Broad, Mr. Sparks, Mr. Schofield and Mr. McDonough, the gallant five who finished out of the fourteen starters.

A tankard was also presented to Flg. Off. Boyes, of the Seven Aeroplane Club, as the winner of the Impromptu Handicap on the Saturday afternoon of the King's Cup Race, the aforesaid handicap being now dignified by the name of the Hendon Handicap.

SIR CHARLES WAKEFIELD'S THANKS.

Sir Charles Wakefield returned thanks for the Cup in one of the neatest and most heart-felt speeches one has ever heard him make. He said that he would prize the King's Cup very highly because it was given by His Majesty, who by thus recognising Aviation was teaching us to think and act Imperially.

Referring to the Duke of Sutherland, he said that His Grace always looked for what was best in people and so always got the best out of them,—a principle in life which many people might follow with advantage.

Sir Charles said that the King's Cup Race this year had been extraordinarily interesting, and the capabilities of the light aeroplane had been remarkably demonstrated. He himself had become the possessor of the King's Cup by good fortune rather than by merit. The real hero of the occasion was the man at the wheel, Mr. Broad. He said that he noticed Captain de Havilland was looking at him expectantly, evidently hoping that he would say something about the machine. He admitted that the modern aeroplane was a triumph of engineering skill. But he asserted once more that it was the human element that counted for most.



A MAIDEN VOYAGE.—The Armstrong-Whitworth Argosy (three 385 h.p. Jaguar engines), the first to be acquired by Imperial Airways, about to leave Croydon on its maiden voyage to Paris on Thursday, July 29. Piloted by Mr. F. L. Barnard and with eighteen passengers, the Argosy covered the distance between London and Paris in 1 hour 51 minutes.

He said that he would be seriously embarrassed if he had to take the £100 Prize as well as the King's Cup, so he would ask Mr. Broad to accept the £100 cheque. This graceful act evidently took Mr. Broad as completely by surprise as it did the audience, and the hearty and sincere applause showed how much the act was appreciated.

One is genuinely glad that Sir Charles did win the King's Cup. He has been such a generous giver of prizes and other gifts, not only to the Royal Aero Club, but to various other institutions, ever since Aviation began, that he thoroughly deserves to become a receiver of prizes.

No doubt Sir Charles' firm has done very well out of the sale of Castrol to Service and civilian aviation people, but those profits have been thoroughly well deserved. The Castrol firm were the very first to make a special oil for aero-engines and for their enterprise in that direction alone they deserve everything good that comes to them.

One hopes that Sir Charles Wakefield's win may prove to be only the second of a series (for Mr. Cobham won the King's Cup for him in 1924). The mere money prize of course is nothing to a man of his wealth. But one who has so long been keenly interested in aviation and has done so much for it does deserve to have something that he can keep about the house as a souvenir of what he did.

MR. BROAD'S REWARDS.

And, so one sees that the £100 cash prize which went with the King's Cup went to Mr. Broad and did not come back to the Aero Club. Of course sooner or later (probably sooner) the Aero Club will proceed to "touch" Sir Charles for some more prizes, and so an equivalent amount will come back, probably with much more added thereto.

With this £100 Mr. Broad really did very well out of the race. Sir Charles had already given him a cheque for fifty guineas, in the same friendly spirit in which an owner of a horse makes a present to a successful jockey. Also Mr. Broad had the £50 cheque offered by Mr. Siddeley for the fastest time done in the King's Cup Race on an engine of less than 80 horse power. And one gathers that he received from the Anglo-American Oil Company, the proprietors of Pratt's petrol, a cheque for £500.

As these are all winnings or presents, and, not being his earnings in the regular way of business, are of the nature of what legal folk call "wind-falls," they are presumably free from Income Tax. So that he has done just about as well out of the King's Cup Race as if he had earned £1,000 in the ordinary way. And he thoroughly deserves it.

THE TOAST OF THE EVENING.

Following these presentations the Duke of Sutherland proceeded to propose the Toast of the evening, the health of "Sir Francis K. McClean."

First of all he read a letter from the Secretary of State for Air addressed to "Colonel" Perrin (whom the Duke congratulated on his further promotion), regretting that he was unable to be present, and expressing his appreciation of all that Sir Francis McClean had done for flying in its early days. The Duke also read a letter from Mr. Holt Thomas referring to the inestimable value of Sir Frank's work as a pioneer.

In proposing the Toast the Duke said that he had been trying to find out something about the early life of Sir Francis, but beyond discovering that he had been to the South Sea Islands before the days of flying he had not discovered much.

He said that our guest had lived a life of successful enterprise in aviation, and proceeded to relate how he had begun flying in 1908, how he had lent Eastchurch to the Admiralty and how the earliest naval aviators, Lieutenants Samson, Gregory and Longmore, R.N., and Lieut. Gerrard, R.M.L.I., had been enabled to learn to fly because of the generosity of Sir Francis in having Short machines built and in lending them to the Navy.

The Duke then gave a general review of what Sir Frank had done for the development of seaplanes, referring to his being the first aviator to alight on the Thames, up which he had flown from Sheerness on one of the earliest Short seaplanes, and how he had had a specially large seaplane built by the Short Brothers in which he had flown, accompanied by Mr. Alec Cgilvie (and also Mr. Horace Short, one may add), up the Nile to Khartoum.

He related how Sir Francis had also helped in the training of Territorial officers with balloons and aeroplanes and how at the outbreak of War in 1914 he had joined the Royal Naval Air Service and served therein with distinction, being ultimately awarded the Air Force Cross. And he concluded by referring to him as "The Father of Naval Flying."

In all due humility one may add that this epithet was applied to Mr. Frank McClean a great many years ago in *THE AEROPLANE*.

The Duke added that Sir Francis had taken part in five expeditions to observe eclipses of the Sun. To this one may add the information that Sir Frank inherited his interest in Astronomy from his distinguished father, who equipped a number of similar expeditions, and, one believes, specifically desired that this work should be carried on by his son.

NO. 1 PILOT'S REMARKS.

Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., Parliamentary Secretary for The Ministry of Transport, himself a contemporary pioneer with Sir Frank, and the holder of No. 1 Aviator's Certificate of the Royal Aero Club, said that we all attended the Dinner in a spirit of better late than never. He felt that it was rather like giving an award for services at the Battle of Agincourt.

The Dinner, he said, might in fact have been held fifteen years ago. Many of the pioneers would have liked to be present if they had survived. Referring to those early days he said that he had himself been classed as an amiable lunatic on account of his early interest in flying.

In those days Frank McClean's purse had been a cornucopia for Aviation. And he hoped that this recognition would comfort other pioneers for their hard work in the past.

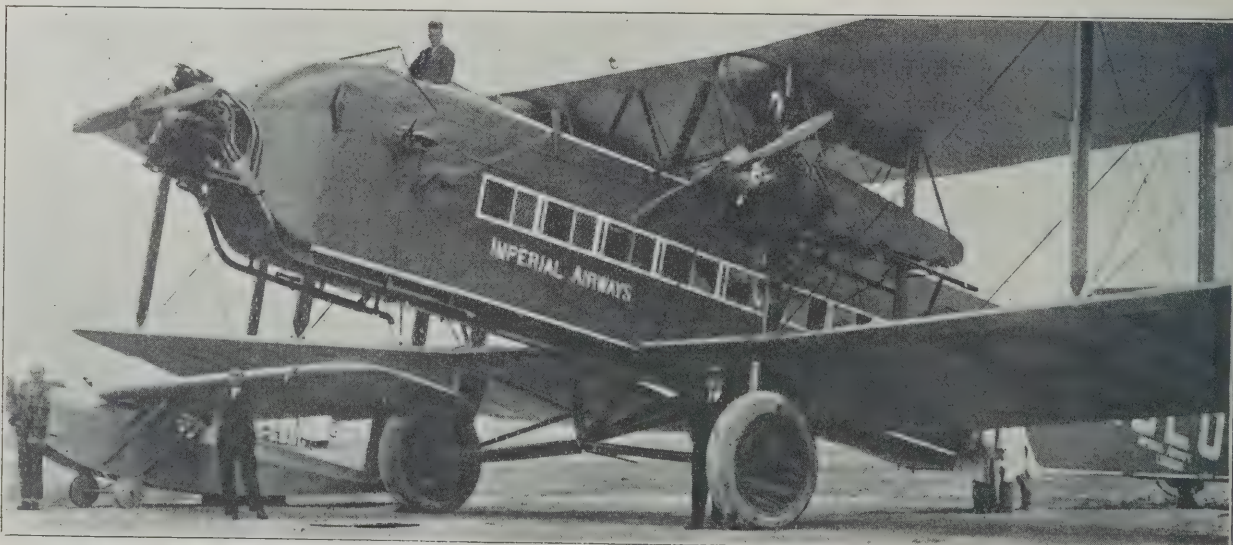
THE NAVY'S FIRST AVIATOR.

Air Commodore A. M. Longmore, C.B., D.S.O., paid a tribute to Sir Frank on behalf of the first four naval aviators.

Incidentally one notices that the speaker referred to our guest as Sir Frank, and not as Sir Francis. One imagines that everybody who has been associated with Aviation for any considerable time will prefer the more familiar Christian name, even with a handle to it.

Thanks to Sir Frank's efforts, said Air Commodore Longmore, the first naval aviators were enabled to fly a year or eighteen months earlier than they would have done normally.

He said that many of the earliest R.N.A.S. people were there that night, and he was sure that, as in his own case, their pioneer days at Eastchurch provided them with their happiest recollections.



THE ARGOSY.—A close up view of the nose of the latest acquisition of Imperial Airways, taken at Croydon aerodrome prior to its maiden trip to Paris. The machine has accommodation for a crew of two and eighteen passengers.

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It may be fairly simple nowadays to fly one machine half round the world, but when four machines do it together, showing the flag, as it were, any one engine or machine of which may break down, and not one of them does, then something has been achieved indeed."

Sunday Times,
4th July, 1926.

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SIR FRANK'S REMINISCENCES.

Sir Frank McClean, to whom one has on occasion referred as the worst speaker in the World, bar one, and that is oneself, made a speech which would have been a good effort for the most practised speaker. He evidently forgot all that nervousness with which his naturally modest and retiring nature afflicts him on public occasions, and felt that he was just speaking to a room full of friends,—which he was.

He said that to have done something, however small, was its own reward, but that the recognition of his friends was very pleasant. As to the honour conferred upon him by His Majesty, he felt that this was an honour to the Aero Club.

He said that the work of the Aero Club before the War was not fully understood. It had, in fact, paved the way for the flying done during the War.

He himself had joined the Club twenty years ago and had gone in for ballooning. In balloons one had no reason for going anywhere and one had no real control over where one went and no one troubled when or where one went. In these days, before one could go anywhere in an aeroplane, one had to show a reason for going and one had to be medically examined to prove that one was fit to go and then one had to get all sorts of licences and things.

Sir Frank said that flying really began in England when Mr. Moore-Brabazon did his first landing on the Isle of Sheppey. Referring to Eastchurch as the home of pioneering, Sir Frank said that before there was any real naval flying it had an amphibian which really amphibbed. It was flown by Lieut. Samson and he thought by Lieut. Longmore. Also it had the Dunne tail-less machine, which was a studied effort to secure stability, all those years before this latest interest in tail-less machines.

Eastchurch in those days was very Naval. Looking towards Colonel Mervyn O'Gorman, who was sitting further down the table, Sir Frank said that Eastchurch regarded the Superintendent of the Royal Aircraft Factory at Farnborough at that time as a being who successfully concealed a spiked tail.

Eastchurch was not hostile to the Army for it endeavoured to get permission to train Territorial officers as aviators. The War Office replied that it did not think that there was any need to teach Territorials to fly. But a Territorial Balloon Company came to Eastchurch for their training and five of the officers were taught to fly aeroplanes, among them being one T. O'B. Hubbard.

By way of showing how ideas had changed Sir Frank read an extract from an agreement made in 1911 between the Admiralty and the Aero Club, as the proprietors of the East-

church aerodrome, in which it was stated that the number of machines in the air must not exceed ten without the consent of the lessors. In these days nobody would bother if there were fifty or a hundred machines in the air at once in the vicinity of the aerodrome.

As to the work of the Aero Club, Sir Frank said that all the original rules for flying were laid down by the Club. Also it investigated accidents, with very beneficial results. All this was now done by the Air Ministry, and the Club now only dealt with amateur flying and sport.

After the War amateur aviation was nearly dead but there had been a revival during the last year. By next year he hoped that amateurs would have a class of their own in racing.

To this one may add the personal opinion that though at present practically all our professional aviators are of the class who were officers during the War it is nevertheless all wrong that serving officers, if they take part in a flying competition, should take cash prizes. No doubt cash is very welcome to any of us at any time, no matter how rich or how poor we may be, but, in all forms of sport, ultimately those governing the sport come to recognise that a definite amateur status must be established, and that amateurs must not receive cash prizes.

Referring to the present position of the Club, Sir Frank said that it was never rich, and that now it was very poor. Every meeting meant a loss of money. Crowds would not come to flying meetings.

Here one disagrees. Crowds will come to flying meetings if those meetings are properly advertised and properly run. The R.A.F. Pageant is sufficient proof of that. And all that is wanted is a capable manager, not necessarily even of the calibre of the late Richard T. Gates, to draw a crowd to an aerodrome and run the first one or two meetings successfully. The only thing that will ever draw and keep a public is sincerity. Richard Gates and Bernard Isaac were absolutely sincere in their faith in aviation and in their love of flying as a sport. In advertising they played down to the Press but they also tried to educate the Press. And even the Press responded to their sincerity. Since their day nobody had ever set about organising a race meeting with such a single-minded and sincere desire to promote the sport of flying.

In conclusion Sir Frank asked all his friends to support to the best of their ability any appeal which might be made on behalf of the Club. Big classic races and record-breaking attempts were a matter for Nations, but he hoped that something would be done for the mere sport of flying.



ON THE AIR ROUTES.—A photograph by the Surrey Flying Services of Tonbridge School, a prominent landmark en route from Croydon to the Continent. In the left bottom corner is part of the Head and the Kickabout. The building half-way up the left side is the chapel, at the east of which are the science buildings. The main school buildings are in the centre of the picture with the Big School jutting out into the Quad. School House, the Observatory and Fives Courts can be seen in the right-hand bottom corner. The main building faces the London-Hastings road, which can just be seen.



THE KING'S CUP AIR RACE, 1926.

The winning of the 1926 King's Cup Air Race by Capt. Broad, on a de Havilland "Moth," fitted with a FAIREY-REED Airscrew, adds yet another event to the long list of successes achieved with the Reed Airscrew.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE CHAIRMAN.

Air Vice-Marshal Sir Sefton Brancker, proposing the health of the Chairman, said that the Duke of Sutherland had been a real friend to aviation. He had given a nice present (a Moth) to the latest baby of the Royal Aero Club, the London Aeroplane Club. Apropos the Flying Clubs, Sir Sefton said that, when a woman competitor won an air contest recently, a Civil Servant in the Air Ministry remarked that he knew there was an Aerial Derby but he did not know there was an Aerial Oaks.

Sir Sefton said that he could vouch for the altruism, energy and keenness, and the power to get the best out of a man, and the high sense of duty of the Duke of Sutherland.

The Duke of Sutherland, returning thanks, said that he had expected to hear an educative discourse on Aviation from Sir Sefton Brancker and had settled down in his chair to enjoy it. And now he found that he had to make another speech. He said, with his usual modesty, that there was very little he was able to do for Aviation, but he did his best.

A PERSONAL NOTE.

Altogether it was a very interesting gathering. There were not so many people there as Sir Frank McClean deserved, but perhaps he was all the happier for that. At any rate, almost all the survivors of his old friends in Aviation turned up to celebrate the occasion with him. Some probably were away on holidays so far that they could not get to London for the occasion. But at any rate there were enough of us there to show Sir Frank that we rejoiced with him in the honour which had been conferred on him.

One would like to take this opportunity of paying one's own little tribute to a man who is one of one's earliest friends in aviation. One first met Frank McClean at Leysdown, or rather at Shellness, in the extreme East of the Isle of Sheppey, quite early in 1909, when he and the never-to-be-forgotten Horace Short were conspiring in the construction of an aeroplane which Frank McClean hoped to fly some day.

The Short Brothers at that time held the British agency for the Wright Brothers, which had been wished onto them, one believes, by Mr. Griffith Brewer. Frank McClean had a Wright biplane at Shellness and on it he was launched along a rail by that catapult device which was necessary to the early Wright machine.

One well remembers one's first sight of the apparatus in action. The actual flight lasted fully fifty yards. And as usual something broke when the machine sat down. A little later the flight extended still further and the machine sat down still harder, with the result that the upper plane descended and enclosed Frank McClean as in a tent. In no wise discouraged, he climbed out of his machine time after time with that same good humoured smile which we all know so well, and merely set to work again.

THE SOVIET MENACE TO INDIA.

The Calcutta Correspondent of *The Morning Post*, in a communication dated July 8, states:—

Confirmation of the seriousness of the Bolshevik menace to India is provided by Colonel Saunders, Director of Military Intelligence in India, lecturing to Europeans in Calcutta. After quoting Zinovieff as saying that "the Achilles heel of the British Empire is India, and we, therefore, must make every effort to develop all possible lines of advance on India," Colonel Saunders described the extensive Bolshevik propaganda in Arabia, Iraq, Turkey, and Persia, and the disappearance of Bokhara and Khiva, which have been replaced by Soviet Republics.

"In Afghanistan," said Colonel Saunders, "the Soviet is most active in preparing lines of advance and in endeavouring to obtain paramount influence. The Russians are giving large subsidies, mainly in arms and munitions, and their engineers are busily building roads and railways. An Afghan air force is being developed, with Russian pilots and mechanics, with its main aerodrome at Kabul, and landing ground have been made at Kandahar and Jellalabad, and from their present aerodromes the Russians can easily bomb Peshawar, Kohat, and Rawal Pindi, and even down to Lahore. This penetration is a serious menace to the peace of India. Further east, in Chinese Turkestan, the same policy is at work, which, if successful, means that India will have in the mountainous area contiguous to its frontier eight hundred miles of Bolsheviks."

The speaker saw in the Red activities in China yet another threat to India through Tibet and Burma, and concluded: "Whereas other nations are economising on military expenditure the Soviet is increasing by 50 per cent. The Soviet menace to India is a very real one, and Bolshevism is the real enemy of all civilised nations. The British Empire has to bear the brunt and main attack which, as announced by the Soviet leaders themselves, is being directed at India."

Lord Rawlinson and General Birdwood have both hinted in speeches that the military strength is at danger point, while less highly-placed soldiers do not disguise their amazement at the evidence of an alarming shortage of mechanical resources.

With reference to the above, and in reply to a question by SIR W. DAVISON, the following statement was made in the House of Commons on July 12 by the UNDER-SECRETARY OF STATE FOR INDIA:—

Apart from his generosity, which has helped so many lame ducks over stiles that it has justified the wealth which he has expended on entirely unworthy human objects in an equally earnest desire to help them, Frank McClean's outstanding characteristic is his good temper. Presumably somebody must have seen him lose his temper at some time or another, but one has not yet met the individual who has done so. Therefore there is nothing surprising in the fact that he has more real friends than any man can reckon.

If Frank McClean had not inherited wealth one doubts whether he would ever have made it, for he is far too good-natured and generous, and he would never have pursued any of the various hard-headed hard-fisted policies by which alone money can be made. But he would certainly have done good work in the World.

In spite of having been born with a golden spoon in his mouth, Frank McClean has always used his very considerable mental ability to good purpose. His astronomical work, before flying began, conferred benefits on the World at large which alone would justify the honour which has been conferred upon him by His Majesty. And the fact that he backed Aviation when he did, and that he devoted himself so particularly to the Naval side of aviation shows that he has foresight and an appreciation of political developments.

Touching this matter of his belated honour, one is not of those who think that it should have been conferred years ago. Up till the outbreak of War in 1914 flying had not developed to the point when anybody deserved a title. Aviation was not sufficiently developed and nobody knew enough about the possibilities of flying to say that this, that or the other person should be honoured with a title as a Pioneer of Aviation. Also the pioneers were very young and it is a bad thing to give a title to a man so young that his subsequent career may not justify the honour conferred upon him.

During the War itself some few titles were given to people concerned with Aviation but mostly they were given for what was generally called War Services, chiefly of a commercial nature. The knighthood given to Sir Henry White Smith was particularly well deserved for he had been Chairman of the Society of British Aircraft Constructors for three consecutive years and was himself a pioneer of aviation dating back to 1910, besides representing, as he did so well, the whole British Aircraft Industry.

It is only now, when war production has ceased and something approximating to peace conditions have arisen, that we can look back calmly on the History of Aviation since it began in this country seventeen years ago and assess without prejudice the value of the work done by the real Pioneers of Aviation. And there is not one among those pioneers who will not agree with a whole heart that of all their number none is more worthy to be honoured by His Majesty than is Frank McClean.—C. G. G.

EARL WINTERTON said that he was aware that there had been reported in the Press a statement which had just been made in Calcutta by the Director of Military Intelligence in India as to the menace to the safety of India owing to Bolshevik activity in Afghanistan, where it was stated that an Afghan air force was being developed, with Russian pilots and mechanics, with new aerodromes and landing grounds, and new military roads and railways. His noble friend (Lord Birkenhead) was inquiring by whose authority it was made. The situation in Afghanistan was being carefully watched by His Majesty's Government.

The question of Afghanistan was again raised in the House of Commons on July 14, when, in reply to a question by SIR F. HALL, LORD STANLEY said that the present strength of the Afghan Air Force was understood to be approximately 12 machines and 36 men. Nearly all the men were Russians. The force was commanded by an Afghan, but Russians were advising in regard to training and development.

LORD THOMSON ON AIR DEFENCE.

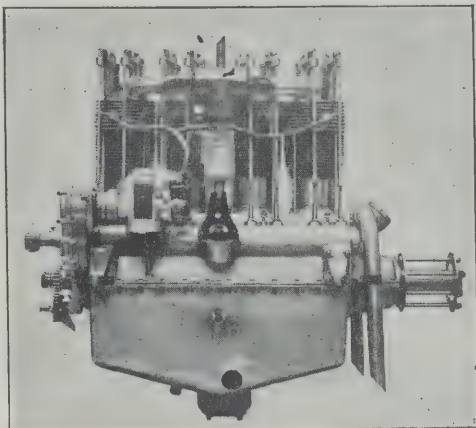
The Lord Thomson, Secretary of State for Air in the Labour Government, was the guest of the London Commercial Club on July 15.

In the course of his speech Lord Thomson said that the R.A.F. must now be recognised as the first line of home defence. Its action would be the first and probably the decisive phase in the next war. He thought that the first attack would be directed against the larger cities and would aim at the destruction of dockyards, railway junctions, and military centres.

With regard to a Ministry of Defence, which had been urged as a measure of economy, he did not consider that such a move would be feasible for another twenty or thirty years. For the moment there were three entirely separate policies which must be pursued, the defence of our communication, the defence of these islands and the defence of India.

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MR. LESTER GARDNER'S AIR TOUR.

On Thursday, July 29, a lunch was given by the Society of British Aircraft Constructors to Mr. Lester D. Gardner, Proprietor and Publisher of *Aviation*, New York, and a Director of the Aeronautical Chamber of Commerce of America. The party was given partly because the S.B.A.C. to a man, like Mr. Gardner very much, and partly to celebrate his extraordinary air-trotting feat of covering 21,000 miles by air without accident, a performance which has been neglected by the British Press with that genius for missing the things which matter and concentrating on the futilities of life which is so typical of English newspapers.

After the usual loyal toast, and after drinking the health of the President of the United States (which surely ought to be drunk in water), Captain Peter Acland, of Vickers Ltd., the Vice-Chairman of the S.B.A.C., proposed the health of Mr. Gardner. He said that we had assembled to meet a business man who had come over to see whether there were any air lines operating in this part of the World, and we wanted him to explain, after his experiences, what air travel meant.

Several of those present, he said, including Sir Geoffrey Salmond and Sir Sefton Brancker, had made long flights which, like Mr. Cobham's long flights, would form the nucleus of future air lines. It was the fashion in speeches and in writing these days to find a slogan for everything, and for Mr. Gardner's method of travelling in comfort by air everywhere he thought the Lester Loiter would be a good phrase, though some might prefer to call it the Lester Lounge.

LORD THOMSON'S VIEWS.

The Lord Thomson of Cardington, the new Chairman of the Royal Aero Club, said that he recognised in Mr. Gardner an enthusiastic supporter of Aviation who had won the admiration of the aeronautical community. He had made the Aerial Grand Tour of Europe, Africa and the Middle East.

It was really a remarkable achievement to have flown 21,000 miles in 53 days without stress or strain. He had slept in a bed in a hotel or a private house every night during these journeys, he had run no risks, and he had returned in the condition which they saw to-day. There was no business man but must recognise the utility of travelling in this manner and of being able to cut out railways and boats, and to substitute this lounging method of transport.

He, Lord Thomson, and Mr. Gardner had met before at the Harvard Club in New York. They had much in common. They had both flown to Baghdad and back by the Desert Route, and he was confident that Mr. Gardner would agree that it was a vital link in World communication. The real value of the work which the R.A.F. were doing in Iraq was that we were doing so much for humanity in linking up communication. He had always maintained, often in the face of acrimonious criticism, that the money we spent in this way was a first-class investment.

He and Mr. Gardner had also both been to Bucharest. He himself had been Military Attaché there for two years. In the course of his duties he had to send in reports, and in one he had to state what was the National Sport. There was a certain amount of sport of a kind but the Roumanian ladies were extraordinarily attractive and he reported accordingly that the national sport was "the assiduous cultivation of the fairer sex," or words to that effect. He asked Mr. Gardner whether his experiences in Bucharest did not confirm this.

Becoming serious, Lord Thomson said that we owed Mr. Gardner a debt of gratitude for his rare and encouraging contribution to aviation.

MR. GARDNER'S STORY.

Mr. Lester Gardner said that he felt the embarrassment of the situation. He had expected to meet a few of his friends in the Aircraft Industry but he did not expect this distinguished gathering. He felt that it was there to honour not himself but the Aeronautical Chamber of Commerce of America, of which he was an unofficial representative. This honour was an evidence of the growing feeling of cordiality between the people of England and of the United States.

He said that he had come over without any intention of doing anything spectacular. He had just come to see a few friends but he had found opportunities of doing a lot of flying. Those who were closest to aviation sometimes felt unfavourably towards air transport, but he thought that they ought to show their belief in its safety by personal demonstration. And he said that his own belief in it was proved by the fact that Mrs. Gardner accompanied him for nearly 5,000 miles of his 21,000 miles of flying, and that Mrs. Gardner now flew with a feeling of relief that she was not compelled to use trains and boats.

Mr. Gardner said that he felt genuinely amused at the idea that a business man flying around as he had done should be regarded as extraordinary. He was sure that aviation was now just at the turning point, for it was possible in these days

to fly everywhere. A person could fly to Casablanca, Constantinople or Moscow, as easily as going by rail.

What had been called "air-trotting" might be a new diversion for jaded globe-trotters. It would provide them with a new form of sport.

He had been asked how much he had seen of the World during his journey. Calculating that on an average he could see for 25 miles on each side of the line along which he was travelling, he calculated that he had seen 1,000,000 square miles of Europe, Asia and Africa.

In all his flights he had never had a forced landing and had never had an engine failure. Of the 53 days he had only had bad weather on three, and even then he had completed his journey. And his average speed for all his journeys was 90 m.p.h. He offered his compliments to the people who had made possible such a record of safety.

The greatest development was along the lines of the human element. Mechanics and pilots were highly efficient, and the ground organisation was far better than he had expected. One could get into an aeroplane on any of the recognised air lines with confidence, especially when it happened to be a British machine made under the rigid inspection of the Air Ministry.

As to the way in which air lines were directed, a friend of his on the Continent, whom he regarded as the greatest authority on air transport, in discussing Civil Aviation, had said that Major Woods Humphrey of Imperial Airways Ltd. was the most competent air-line operator in Europe.

He himself had been fortunate in travelling in so many British aeroplanes and with so many British engines. And Mrs. Gardner had similar confidence in British aircraft. He had flown in Vickers, de Havilland and Bristol aeroplanes. And on foreign air lines more British engines were used than anything else, so he had also flown with Napier, Rolls-Royce, Jaguar and Puma engines.

As to the Near East, he said that he felt that with the development of the Cairo-Karachi route the phrase would include all Asia, and would not be purely geographical.

With the developments which were now going on, he felt that Civil Aviation would soon be Commercial Aviation and that subsidies would no longer be necessary. He said that the old slogan of hands across the sea seemed a little worn out. Aviation would promote solidarity between the people of England and America, so he asked the company to drink to "Wings across the Sea." Which they did with good will.

AUF VIEDERSEHEN.

One hopes at a later date, when Mr. Gardner has returned to America and has published the account of his journeyings in *Aviation*, to publish in *THE AEROPLANE* a full account of his itinerary.

Meantime one may state that in the course of his 21,000 miles of flying, done in 53 flying days spread over four months, he has flown over 28 countries with 65 pilots of 12 different nationalities. As his average speed was 90 miles per hour he has put in about 230 flying-hours, or about 4½ hours on each flying day. Which would be very good going for any Service pilot, or observer.

It was a distinctly good show for a man of close on 50 years of age (his 50th birthday is on Aug. 7.—Many Happy returns). And he is not of the hard-bitten athletic type either, though one knows to one's cost that he has immense staying-power—having tried to live up to his pace for a month in the United States.

Of course Mr. Gardner has been extremely lucky in his weather, his machines, his engines and his pilots. During the period in which he was careering over Europe and Africa and the Near East, eleven people have been killed on the Continent of Europe in accidents to regular air-line machines. Perhaps that is not a very high proportion of fatalities per passenger-mile. But one is fairly sure that it is higher than the passenger-mile casualty rate of even the French railways which are about the most homicidal in the World.

Even allowing that all Mr. Gardner's mascots must have been working overtime for him, he certainly has done some thing which, if only it is intelligently used by the director of the various air lines all over the World, will ultimately do good to aviation. Perhaps the German air lines will influence the German Press so that the lessons to be learned serve a useful purpose. And one feels sure that when Mr. Gardner gets back to America his account of his journey will be used most effectively for the benefit of American Civil Aviation. But of course it is far too much to expect that the British Press will give anything like as much attention to this remarkable journey as they did to that unfortunate but quite ordinary accident to an aeroplane at Hinaidi the other day.

Still, somehow or another, these lessons will gradually percolate to the intelligence of a certain number of the members of the British Public and to that extent British Aviation is already indebted to Mr. Gardner.

When these notes appear Mr. and Mrs. Gardner will be o

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C.P.

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the Atlantic on their way home. One wishes them on behalf of the whole of the British aeronautical community a safe journey and many years' continuation of the good work which they have both done for International Aviation. And may they soon come back for another air tour—for we shall all be very pleased to see them.—C. G. G.

AVIATION IN TURKEY.

The following interesting information concerning the activities of the Constantinople Aero Club has been extracted from *The Times* :—

One of the most interesting features about modern Turkey is the amount of attention which is being devoted to aviation. On July 7 the Constantinople Aero Club held its second general meeting which was attended by no fewer than 500 members. Hakim Riza Bey, Deputy for Kutahia, presided, and several influential members of the popular party made speeches in which they reaffirmed the necessity for Turkey to possess a strong air force. One speaker referred to Italian designs in Asia Minor, and bluntly informed his audience that it was the duty of every patriotic citizen to ensure that the Turkish Republic should be speedily equipped with an efficient air wing.

At the close of the meeting it was decided to urge the Government that certain donations or forced levies should be contributed by the taxpayers towards the cost of creating an air fleet. The principal suggestions were that 2 per cent. of the income tax of Constantinopolitans, 10 per cent. on taxes paid in advance, and 3 per cent. of the tax levied on buildings and land, if in excess of ten Turkish pounds (30s.), should be given to the Aero Club. When it is taken into consideration that the same Aero Club has been assiduously organising lotteries throughout Turkey in aid of aviation, it will be realised that a really serious effort is being made, unofficially as well as officially, to encourage the development of flying. At the present moment French instructors are busily engaged in giving tuition to Turkish pilots, while some of the latter have gone abroad to receive more advanced instruction.

Civil aviation, which ostensibly is the only branch in which the Aero Club is interested, has not been developed to any great extent, although the Franco-Roumanian Air Company maintains a service between Bucharest and Constantinople. Travellers between Angora and Constantinople still have to rely on an 18-hours' train journey, although next year a daily air service is promised.

Competent observers do not consider that Turkey possesses an air force equal to that of some of her nearer neighbours. The Government has been very chary of voting money towards a branch of defence which is not yet appreciated at its proper value. If, however, the Aero Club continues its active propaganda, there is no reason why the Turkish Air Force should not speedily develop into a formidable weapon. French, German, and other foreign aeroplane manufacturers appear to have realised the possibilities of the Turkish market, and it would seem regrettable that British machines are so far conspicuous by their absence.

Regarding Service aviation it has already been noted that the Turkish Government has organised a single-seat fighter competition and that a number of French and one Germano-Danish (Rohrbach) firms are competing. The object of this competition is to select suitable fighter equipment for the Turkish Air Force, and the winner of the contest will receive an order for 50 aircraft.

THE BUSK STUDENTSHIP.

The trustees of the Busk Studentship, founded in memory of Edward Teshmaker Busk, who lost his life in 1914 while flying an experimental aeroplane, have awarded the studentship for the year 1926-27 to Mr. Percy Brooksbank Walker, of Peterhouse, Cambridge.

MR. COBHAM'S PROGRESS.

Mr. Alan J. Cobham and Sgt. Ward, R.A.F., who are attempting to fly to Australia and back on a de Havilland 50J (Armstrong-Siddeley Jaguar engine), left Rangoon for Victoria Point (the most southerly point in Burma) on July 27.

On July 28 they flew to Penang.

On July 29 they flew to Singapore, where they stopped for an extra day.

On July 31 they flew to Muntok, Sumatra.

On Aug. 1 they flew to Batavia.

On Aug. 2 they flew to Sourabaya.

THE GERMAN SEAPLANE COMPETITION.

On July 31 the German Seaplane Competition, which has been held at Warnemünde, came to an end.

The competition began on July 12, and of the seventeen entries which arrived at Warnemünde, ten survived the technical tests and started on the flying tests. Of these ten, six completed the coastal flights and waited for the seaworthiness tests. As a certain degree of roughness was required to determine the results of the seaworthiness tests the actual date of the termination of the competition was indefinite.

During the coastal flights, two accidents, one fatal, occurred. One machine, an L.F.G. V.60, was forced to alight with engine trouble, and the pilot was washed off the machine by a wave and drowned. The machine and the remaining member of the crew were saved by a lifeboat. The

other accident was of a similar nature, but in this case the machine sank, but the crew of three were saved.

The final seaworthiness tests were held on July 31, in a rough sea, and only three machines out of the final six survived. In two cases machines had their floats smashed by the heavy seas.

The winner of the competition was Herr von Gronau, on a Heinkel H.E.5 monoplane (450 h.p. Napier Lion engine), the other two survivors being Herr Langanke on a Junkers W.34 monoplane (320 h.p. Junkers L.5 engine), and Herr Spies on a Heinkel H.D. 24 biplane (240 h.p. B.M.W.IV engine).

The success of the Napier Lion engine in this very severe competition is very satisfactory.

Owing to the lack of detailed information it is impossible to deal fully with this competition this week, but it is proposed to give a full description in next week's issue.

U.S. AIR SECRETARIES.

On June 30 President Coolidge sent to the U.S. Senate the nomination of Professor Edward P. Warner to be Assistant-Secretary of the Navy for Aviation, and on July 2 the Senate confirmed the nomination, together with that of Mr. Trubee Davison, to be Assistant-Secretary of War for Aviation.

These two appointments, together with that of Assistant-Secretary of Commerce for Aviation, not yet appointed, are provided for under the new Legislation governing American aeronautics.

Professor Warner, who was born in 1894, graduated at Harvard (1916) and later at the Massachusetts Institute of Technology (1917 and 1919) and was responsible for most of the aeronautical instruction in the special Army and Navy Schools at the M.I.T. in 1917-18. In 1919 he became Chief Physicist to the National Advisory Committee for Aeronautics, and was in charge of aeronautical research at Langley Field.

In 1919 he was elected Secretary to the Aerodynamics Subcommittee of the N.A.C.A. In 1920 he became Associate Professor in Aeronautics at the M.I.T., and in 1924 he became Professor of Aeronautical Engineering at the same establishment. He has also acted as consulting engineer to the U.S. Air Mail Service, and in a consulting capacity to both the Army and Navy Air Services. He was also technical adviser to both the Lampert Committee, and the Morrow Board.

Mr. F. Trubee Davison, who was born in 1896, graduated from Yale (1918) and the Columbia Law School (1922). He learned to fly in 1916 and joined the Naval Air Service in 1917. He is a trustee of the Guggenheim Fund and a director of the National Air Transport, Inc. Presumably he will have to vacate these latter positions on becoming a Government official.

CONTROL OF THE FRENCH AIR SERVICES.

Following on the suppression of the office of Under-Secretary of State for Air in the recent French Governments it is now announced that M. Tardieu, the Minister of Public Works, has been placed in control of the French Air Services.

ITALY AND THE AIR LEAGUE OF THE BRITISH EMPIRE.

A meeting of the Air League of the British Empire was held at the Royal Society of Arts on July 14, with Sir Sefton Brancker in the chair.

The Baron Bernardo Quaranta di San Severino delivered an interesting address, illustrated with cinema films on Italian Aviation.

The three cinema films showed Ferrarin's flight from Rome to Tokyo, the return of de Pinedo from his flight over three Continents, and Colonel Nobile and the Norge.

The Italian Ambassador, Senator Marconi and representatives of the Air Ministry were among those present at the meeting.

At the close of the meeting telegrams of congratulation were despatched to Colonel Nobile and to Signor Mussolini, as Italian Air Minister.

A HAPPY RETURN.

On July 28, Capt. Girier and Lieut. Dordilly arrived at Le Bourget at 18.30 hours on their return from Omsk. They left Moscow at 04.00 hours and covered the distance of 1,740 miles from Moscow to Paris, non-stop, in 14 hours 30 mins.

It will be remembered that these two officers flew from Paris to Omsk on a Breguet XIX biplane (500 h.p. Hispano-Suiza engine), a distance of 2,940 miles, in 29 hours non-stop, thus putting up a new World's Record for Distance covered in a straight line.

They have, in addition to putting up a new record, become the holders of the first Coupé Renault, 1925-26, the competition for which closed on July 31.

This success carries with it a sum of 50,000 francs, and an *objet d'art* valued at 5,000 francs.



MOTHS

AT THE
YORKSHIRE AIR
PAGEANT.

Of the eighteen aeroplanes participating in the Air Pageant organised by the Yorkshire Aeroplane Club, at Sherburn-in-Elmet, on July 24th, TWELVE were de Havilland MOTHS.

They were flown by members of the Yorkshire, London, Lancashire and Newcastle Clubs and by several private owners.

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OF AIRWORTHINESS.

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**THE
KING'S CUP**
WON BY
Capt. H. S. BROAD, A.F.C.
ON A
**DE HAVILLAND
MOTH**
AT A SPEED OF
90.4 M.P.H.

THE ROYAL AIR FORCE.

The London Gazette.

July 27.

GENERAL DUTIES BRANCH.—The following are granted S.S. comms. as Plt. Offs. on probation, with effect from and with seniority of July 17:—T. M. Abraham, P. V. Anson, G. M. Buxton, R. J. Carvell, H. H. Ellison, B. G. Farrow, C. G. Grenfell, L. S. Hill, E. J. Martin, K. E. Parker, J. W. Pease, A. A. Rumsey, A. E. S. Moore, N. W. K. Seeman, E. F. Shine, K. R. Soward, D. Taylor, J. R. Whitley, C. C. D. Williams.

Lt. V. S. Bazalgette, The King's Own Royal Regiment, is granted a temp. comm. as a Flg. Off. on seconding for four years' service with the R.A.F. (July 17); Plt. Off. on probation B. E. Moody is confirmed in rank (June 21); Plt. Off. on probation E. J. Pentland resigns his S.S. comm. (July 28).

STORES BRANCH.—The following Flg. Offs. on probation are confirmed in rank (May 24):—L. L. Bray, H. D. Giblett, L. Horwood, M.C. Plt. Off. on probation L. F. Caunter is confirmed in rank (June 22); Flt. Lt. L. A. K. Butt is confirmed in his appointment in the Stores Branch (May 24).

MEDICAL BRANCH.—J. Twohill, M.B., is granted a S.S. comm. as a Flg. Off. for three years on the active list, with effect from and with seniority of July 13.

CHAPLAINS' BRANCH.—The Rev. C. O. R. Wormald, M.A., resigns his S.S. comm. and is appointed an hon. chaplain to the R.A.F. (July 28).

RESERVE OF AIR FORCE OFFICERS.—W. Dougall is granted a comm. in Class A.A., General Duties Branch, as a Plt. Off. on probation (July 12); Flg. Off. L. R. Tait-Cox is confirmed in rank (July 26).

The following Flg. Offs. are transferred from Class A to Class C:—F. H. Pidgeon (July 24); W. J. Walsh (July 25); E. H. Du Heaume, A.F.C. (July 27).

Flg. Off. H. P. Dean is transferred from Class A to Class B (June 19); Flt. Lt. J. P. Wells, B.A., relinquishes his comm. on completion of service (July 13); Flg. Off. P. R. Cawdell resigns his comm. (July 14).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Flt. Lt.:—No. 601 COUNTY OF LONDON (BOMBING) SQDN.—R. A. Grosvenor, M.C. (July 27).

Appointments.

Week ending Aug. 3.

GENERAL DUTIES BRANCH.—Squadron Leaders:—J. V. Steel, O.B.E., to No. 20 Sqdn., India, 23/7. G. C. Bailey, D.S.O., to Aircraft Depot, India, 23/7. J. B. Cole-Hamilton, to R.A.F. Depot, Uxbridge, on transfer Home Estab., 12/6.

Flight Lieutenants:—R. W. Dawes, to H.Q., Inland Area, Stanmore, 19/7. A. T. Laing, to Home Aircraft Depot, Henlow, on transfer to Home Estab., 19/7. N. W. Wadham, to R.A.F. Transjordan H.Q., 24/7. F. G. Brockman, to Station H.Q., Spittlegate, on transfer to Home Estab., 27/7. F. H. E. Reeve, to R.A.F. M.T. Depot, Shrewsbury, 30/7. A. L. A. Perry-Keene, to Station H.Q., Bircham Newton, 17/7. A. M. Wray, M.C., D.F.C., A.F.C., to R.A.F. Training Base, Leuchars, 19/7. W. Catchpole, A.F.C., to No. 1 Stores Depot, Kidbrooke, 26/7.

Flying Officers:—B. G. Pool, to Record Office, Ruislip, 15/7. W. E. Cowan, to R.A.F. Depot, Uxbridge, instead of to No. 32 Sqdn., as previously notified, 21/7. D. R. Mitchell, to No. 5 F.T.S., Sealand, 19/7. H. V. David, to R.A.F. M.T. Depot, Shrewsbury, 3/8. M. H. Carnons-Williams, to A. and A.E.E., Martlesham Heath, 20/7. F. S. S. Lamprey, to No. 4 Sqdn., S. Farnborough, 3/8. L. T. Kerry, M.C., to Record Office, Ruislip, 19/7. I. Glyn-Roberts, to R.A.F. Depot, Uxbridge, 3/8. R. Y. Eccles, to No. 5 F.T.S., Sealand, 5/8. J. E. Doran-Webb, to R.A.F. Depot, Uxbridge, 20/7. A. G. Moon, to No. 1 School of T.T. (Apprentices), Halton, 20/7.

Pilot Officers.—The undermentioned Pilot Officers are posted to No. 4 F.T.S., Egypt, 24/7:—B. H. Ashton, B. W. Barton, J. Barton, H. B. Collins, R. W. Coneybeer, B. A. J. Crummy, R. C. Edwards, H. V. Forbes, R. G. Greenhalgh, R. G. Hennessy, D.S.O., M.C., D. K. Hewison, C. E. Kay, H. C. Marrett, A. O. Moore, L. K. Mundy, C. Pitt-Hardacre, M. M. Restell-Little, F. H. L. Searl, F. S. Smythe, A. J. Vaughan, W. T. Walton, A. R. Ward.

MEDICAL BRANCH.—Flying Officer J. D'I. Rear, to R.A.F. Depot, Uxbridge, 26/7, and to School of Army Co-operation, Old Sarum, 27/7.

STORES BRANCH.—Pilot Officer F. W. Felgate, to Home Aircraft Depot, Henlow, 22/7.

The Accident at Hinaidi.

His Majesty the King has forwarded the following telegram to Sir Samuel Hoare, Secretary of State for Air:—

I am shocked to learn of the terrible accident in Iraq

resulting in the loss of valuable lives. Please send me any further information and I hope the injured are doing well. Will you be good enough to convey the expression of my true sympathy with the relatives.

GEORGE R.I.

The Secretary of State has replied thanking His Majesty for his gracious message which was at once communicated to the relatives of those who lost their lives.

The Governor-General of the Irish Free State has sent the Secretary of State for Dominion Affairs a telegram containing the following message from the President of the Executive Council for the Prime Minister:—

My colleagues and I are deeply grieved to learn of the air disaster at Baghdad. Please convey our sincere sympathy to the Air Ministry and the relatives of the victims.

The Secretary of State has sent the following reply from the Prime Minister:—

I have been asked by the Secretary of State for Air on behalf of the Air Council and Royal Air Force to thank you for the message of sympathy sent on the occasion of the tragic accident at Baghdad. Your message is deeply appreciated, and will at once be communicated to the relatives of those who have lost their lives.

The Service Mediterranean Cruise.

The R.A.F. Flight, consisting of two Supermarine Southampton flying-boats (Napier Lion engines), which has been engaged on a cruise in the Mediterranean, arrived at Cattewater on July 30. The Flight was greeted at Cattewater by Wing Cdr. R. B. Maycock, O.B.E., Commanding the Marine Aircraft Experimental Establishment, Felixstowe.

The Flight, which was made under the command of Sq. Ldr. G. E. Livock, D.F.C., was an ordinary Service exercise to a set time-table with standard Service machines. A crew of four and a full Service load was carried throughout.

The total number of machine-miles flown was 13,800.

The machines were equipped with W/T apparatus, and constant communication was maintained throughout with R.A.F. and other wireless stations.

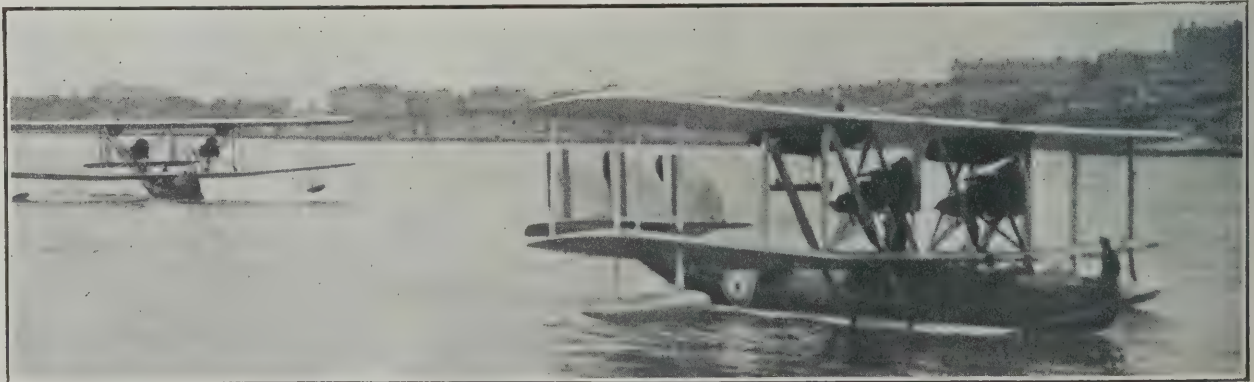
During the return journey between Athens and Malta, the following telegram was sent by Malta to the Air Ministry and shows the routine procedure adopted and the value of such communication on a long-distance cruise:—

Position of Southampton Flying-boats at 07.15, 39 degrees 18 mins. N., 18 degrees 54 mins. E., track 255 degrees. Position at 07.30, 39 degrees 9 mins. N., 18 degrees 24 mins. E., track 253 degrees. Position at 07.45 hours 39 degrees 2 mins. N., 17 degrees 58 mins. E., track 254 degrees. Position at 08.00, 38 degrees 55 mins. N., 17 degrees 35 mins. E., track 253 degrees. Position 08.30, Point di Stilo bearing 290 degrees distant 6 miles, track 220 degrees. Position 08.55, Cape Spartivento bearing 226 degrees, distant 28 miles, track 220 degrees. Position at 09.00, Cape Spartivento, bearing 253 degrees, distant 8 miles track 220 degrees. Position at 09.15, 27 degrees 38 mins. N., 15 degrees 54 mins. E., track 220 degrees. Position at 09.30, 37 degrees 35 mins. N., 15 degrees 48 mins. E., track 220 degrees. Position at 09.45, 37 degrees 22 mins. N., 15 degrees 38 mins. E., track 220 degrees. Position at 10.02, Cape Roca bears 312 degrees, distant 10 miles, track 220 degrees. Position at 10.15, passing Cape Murro di Porco, wind S.E. 15 m.p.h. Position at 10.30, Cape Passero 204 degrees, distant 8 miles, track 204 degrees. Position at 10.50, Cape Passero bearing 32 degrees, distant 5 miles, track 210 degrees. Position at 11.00, 36 degrees 24 mins. N., 14 degrees 58 mins. E., track 210 degrees. Position at 11.15, 36 degrees 11 mins. N., 14 degrees 48 mins. E., track 210 degrees. Approaching Malta, reeling in.

The machines were moored out to buoys at each port, and re-fuelled by petrol taken on board by dinghies.

No trouble whatever was experienced with the aircraft or the engines.

The personnel of the Flight were:—Sq. Ldr. G. E. Livock, D.F.C. (in command of Flight), Flt. Lt. B. C. H. Cross, D.F.C., Flt. Lt. D. V. Carnegie, A.F.C., Flg. Off. L. Martin, 331706 Sgt. W. Cushing (Fitter, Aero-engine), 333907 Cpl. W. McMeeking (Fitter, Aero-engine), 327108 L.-AC. F. Nelson (W/T Operator), 348697 AC.1 G. Dunn (W/T Operator).



THE END OF THE MEDITERRANEAN CRUISE.—The arrival of the two Supermarine Southampton flying-boats (two 450 h.p. Napier Lion engines each) at Cattewater on July 30.

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Passing out at the Cadet College.

Air Commodore A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., Air Officer Commanding the Royal Air Force, Cranwell, issued the following report on the occasion of the Passing Out Inspection at Cranwell:—

The total strength of the Cadet College is 104, of whom 19 are due to pass out this term.

The total flying time during the term was 2,954 hours 10 minutes. The Cadets now due to pass out have averaged 77 hours' flying, of which 28 hours have been solo on Service types.

I deeply regret to record the death of Flight Cadet H. F. M. Pickford, due to a flying accident. This is the third fatal accident which has occurred since the formation of the Cadet College—February, 1920; since when 265 Cadets have passed out from the College and a total of 24,500 hours' flying has been carried out.

On the whole the standard attained has been satisfactory. In Aeronautical Engineering Flight Cadets showing the most aptitude have been the ex-Aircraft Apprentices. Thesis writing in Aeronautical Science has been introduced in this year's programme with the object of encouraging individual reading and original thought. All have tackled well the advanced thesis on Strategy, which they carry out in their own time as part of the final examination.

Many interesting debates have taken place at which Cadets have shown great keenness and the standard of speaking has been high. Over 300 books have been added to the Reference and Recreation Libraries since the last report.

A considerable amount of practical instruction in short wave Radio Telephony has been carried out with good results. A new type practice buzzer has been designed for installation in each of the Cadets' living quarters.

In Musketry Training the present First Term Cadets have been the first to shoot the R.A.F. Recruits' Musketry Course and have done exceedingly well.

At the Annual Rifle Meeting at Bisley this year the Cranwell Rifle Club, consisting of personnel from the Cadet College and No. 4 Apprentices' Wing, created a record in winning the only two team events of the meeting, namely the Chief of the Air Staff's Cup and the Salmund Inter-Unit Pistol Team Prize.

In the individual competitions the members did exceptionally well. In the Inter-Service Rifle XX two-fifths of the team were members of the Rifle Club.

Three members were in the final stage of the King's Hundred for the King's Prize. This constitutes a record for any unit of His Majesty's Regular Services.

Flt. Lt. J. K. L. Pearce, who is Captain of the Cranwell Rifle Club, represented Ireland in the Irish VIII and Irish XX, and F.S. Williams represented Wales in the Welsh XX.

Instruction has been given in the use and maintenance of parachutes, and 31 Officers and 4 Cadets have made descents.

The discipline has been good and the Under Officers and Non-Commissioned Officers have performed their duties in a most satisfactory manner.

The health of the Cadets during the past half-year has been excellent.

The Permanent Building Committee recently visited Cranwell to select a site for the new Cadet College, and it is to be hoped that the work will commence in the near future as the College loses in efficiency in the absence of permanent buildings.

The standard of Physical Training Instruction remains high and the average gain in physical improvement for the term is satisfactory.

The Inter-Squadron Boxing Competition resulted in a win for "B" Sqdn. by ten points to five.

The Cadets' Skill-at-Arms Team won all their matches, including that with the R.M.A., Woolwich.

Cricket has shown a great improvement, both in the number of Cadets playing and their form in general, which is largely due to the services of a professional having been engaged. At the beginning of the season bad weather interfered considerably with the game, but out of 26 fixtures arranged 16 games were played, of which 9 have been won, 5 drawn, and 2 lost.

Rowing is now included in the number of points to count towards the Chimay Cup and the Champion Squadron. During the past two months crews have rowed at Evesham, Burton and Derby Regattas.

The standard attained at the Inter-Squadron Sports was equal to the best results of previous years. The College record for the 220 yards Hurdles was lowered by two-fifths of a second by Flight Cadet Francis.

The Inter-Squadron Athletic Cup was won by "B" Sqdn. for the second year in succession by six points to five.

The Athletic Team competed in two contests. The first against Clare College, Cambridge, resulting in a win for Clare College. The second contest was with Queen's College, Cambridge, which resulted in a win for the Cadet College.

The triangular contest between the R.A.F. Cadet College, R.M.C., Sandhurst, and the R.M.A., Woolwich, had to be cancelled on account of the general strike.

Only three hockey matches were lost during the season, one of them being against the R.M.C., Sandhurst. The Cadet College won against the R.M.A., Woolwich.

Meets of the Beagles have been well attended and hunting throughout the season has been good.

The Chimay Cup for Inter-Squadron Games has been won by "B" Sqdn., the scores being:—"A" Sqdn., 10 points; "B" Sqdn., 25 points.

The Trenchard Cup for Service subjects has been won by "B" Sqdn.:—"A" Sqdn., 10 points; "B" Sqdn., 55 points.

"B" Sqdn. gains the title of Champion Squadron-at-Arms and therefore entitled to parade on the right of the line, scoring 80 points to "A" Sqdn.'s 20 points.

I wish to place on record my appreciation of the able manner in which Officers, Civilian Professors and Lecturers and Non-Commissioned Instructors have assisted me in carrying out the syllabus of instruction as laid down by the Air Ministry.

The Sword of Honour, presented to the best all round Flight Cadet in the Senior Team, has been awarded to B. C. Yarde.

The R. M. Groves' Memorial Prize, for the best all round Pilot in the Senior Team, has been awarded to H. A. Purvis.

The Abdy Gerrard Fellows' Memorial Prize for the Flight Cadet obtaining the highest total marks in Mathematics and Science, has been won by W. L. Freebody.

The Air Ministry prize on Humanistic subjects has been won by W. L. Freebody.

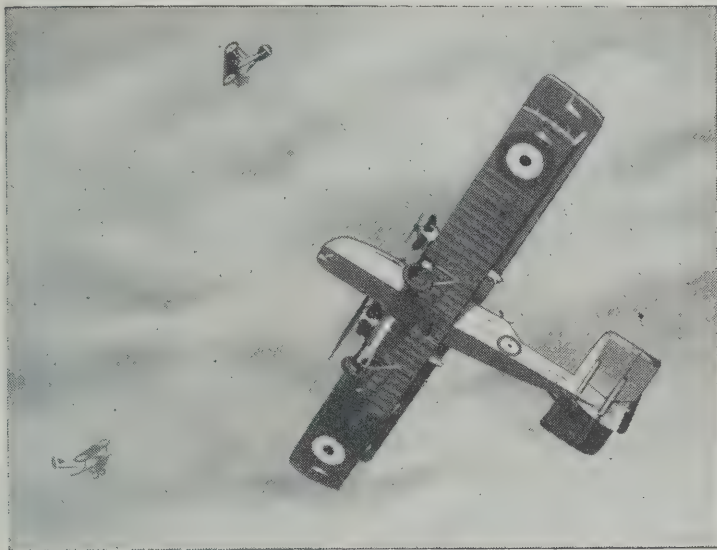
The Air Ministry prize in Aeronautical Engineering has been won by K. F. Brake.

A Cup for Inter-Squadron Tennis has been very generously given to the Cadet College by Capt. R. De la Bere, Professor of English and History.

A trophy for Inter-Squadron Rowing has been given to the Cadet College by the Aircraft Apprentices of No. 4 Aircraft Apprentice Wing on leaving Cranwell for Halton. These presentations have been very much appreciated.

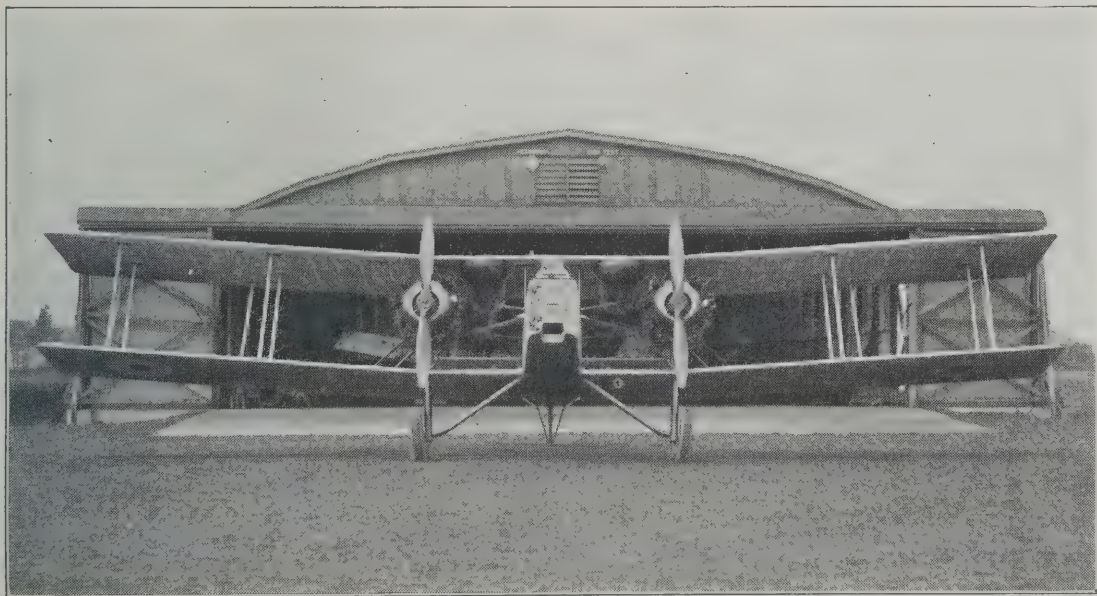


THE PERSONNEL OF THE MEDITERRANEAN FLIGHT.—In the front row, from left to right, are Flt. Lt. B. C. H. Cross, D.F.C., Sq. Ldr. G. E. Livock, D.F.C., Flt. Lt. D. V. Carnegie, A.F.C., Fig. Off. L. Martin, all in tropical kit, and in ordinary kit Wing Cdr. R. B. Maycock, O.B.E., Officer Commanding the M.A.E.E., Felix-stowe.



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Aircraft Apprentices at Cranwell.

The following report was issued by Air Commodore A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., Air Officer Commanding Royal Air Force, Cranwell, at the Passing Out Inspection of the September, 1923, Entry of Aircraft Apprentices on July 29:—

At the present time there are 973 Aircraft Apprentices under training here, made up of the following trades:—1 Armourer, 1 Carpenter, 6 Carpenters, Motor Body Builder, 197 Carpenters, Rigger, 39 Copper-smiths, 487 Fitters, Aero Engine, 60 Fitters, Armourer, 92 Fitters, Driver Petrol, 47 Fitters, Rigger, 43 Turners.

The discipline has been good, the standard set by former entries being maintained.

The standard of Technical Training has undoubtedly improved, this being especially noticeable in basic work. Much benefit has been derived from the engagement of Civilians as Permanent Instructors and the method of posting Service Instructors to the Unit for at least three years.

The educational work in the School has made very considerable progress. The entry just passing out has benefited by the greater experience of the Education Officers and by the continual and increasing co-operation which exists with the Technical Officers—95.5 per cent. of this entry having qualified as L.A.C. in educational subjects, and 41 per cent. of the entry having obtained the requisite 60 per cent. which exempts them from the Studentship examination of the Institute of Mechanical Engineers.

The health of the Aircraft Apprentices has been good. We have been troubled with no epidemics during the past year, but regret to report the death of one apprentice from spinal meningitis.

All Apprentices have completed Parts 1 and 2 of Table "A," and considering the short time available for preliminary training the results have been most gratifying. V.S. Dormitory of No. 3 Sqdn. won the Musketry Cup, and Aircraft Apprentice Williams the Cup presented for the highest individual score.

The recent increase in the number of playing grounds has enabled a most comprehensive round of Leagues and Competitions to be held in all forms of Sport. Many outside matches have been played at Rugby, Association, Hockey, Cricket and Tennis, while the Wing Gymnastic, Boxing and Cycling Teams have given a good account of themselves in the neighbourhood.

The results of some of the competitions are:—Station Association Football League, No. 2 Sqdn.; Station Rugby Football League, No. 2 Sqdn.; Inter-Squadron Association Football, No. 2 Sqdn.; Inter-Squadron Hockey, No. 2 Sqdn.; Inter-Squadron Rugby, No. 2 Sqdn.; Inter-Squadron Cricket, No. 1 Sqdn.; Inter-Squadron Boxing, No. 2 Sqdn.

Of the 973 Apprentices here 529 are due to leave now. They have passed for qualification as:—L.A.C., 81; A.C.1., 207; A.C.2., 216; Failed, 23; did not sit examination owing to sickness, 2.

Cadetships have been offered to:—No. 364272 Stephenson, J. T. (Croydon); No. 364040 Mutch, J. (Dinnet, Aberdeenshire); No. 364333 Worstell, W. R. (Swindon); No. 364361 Weaitt, A. L. (Bexley, Kent); No. 364365 Whittle, F. (Leamington, Warwickshire).

The undermentioned are retained for the Advanced Course:—No. 364253 Smith, R. Y. J., No. 363984 Dunkley, B. E., No. 363907 Allen, R. H., No. 363980 Henry, R. C., No. 363956 Hickman, A. A. F., No. 364335 Watson, P. D., No. 364172 Stocks, R. B., No. 364145 Mercer, F. L., No. 364023 Foreman, H. Z., No. 363995 King, A. G. W., No. 364134 McNama, M. G., No. 363964 Freeman, H. H., No. 363944 Falconer, R. A. R., No. 363880 Burrows, C. S. J.

The following is a list of awards for the prizes offered by the Air Ministry:—(1) Carpenter Rigger—363829 AA. (Boy) Cook, F. W. (2) Fitter, Aero Engine—364253 AA. (AC.2.) Smith, R. Y. J., (3) Fitter, Armourer—363831 AA. (AC.2.) Bickenson, J. S. (4) Fitter, Driver Petrol—364447 AA. (AC.2.) Owen, R. W. (5) Fitter, Rigger—364040 AA. (AC.2.) Mutch, J. (6) Turner—363811 AA. (AC.2.) Barretto, F. W. P. (7) Educational Subjects—364023 AA. (AC.2.) Foreman, H. Z. (8) Grand Aggregate—364253 AA. (AC.2.) Smith, R. Y. J.

The R.A.F. in Parliament.

L.A.C. TAYLOR, R.A.F.

In the House of Commons on July 26, MAJOR SIR BERTRAM FAIR asked the SECRETARY OF STATE FOR AIR the number of desertions from the Air Force in India since January, 1926, how many such deserters had been arrested; if L.A.C. Taylor, who was granted 28 days' leave in February last had been arrested; if the Air Force was satisfied that this man, whose previous character was very good, did in fact desert, and that there can be no question of death or murder; and seeing that it would be difficult for a white man over six feet tall to hide in India without attracting attention, may inquiry be made into the case?

SIR SAMUEL HOARE replied that, with the exception of Taylor, whose case is as yet unexplained, there had been no desertions from the Air Force in India since January, 1926.

SIR BERTRAM FAIR asked whether it has been ascertained if Taylor ever reached the city to which he was given leave, and why such a long period as six months had been allowed to elapse before inquiries were made into his case?

SIR SAMUEL HOARE replied that he could not answer the first point without notice. The case had not been called to his notice before, and he would at once make inquiries.

R.A.F. CRASHES.

In reply to MR. VIANI, SIR SAMUEL HOARE stated that during the last year, from June 30, 1925, to June 30, 1926, 70 aeroplanes of post-war design and 192 of War design had been written off Air Force charge after crashing. The undepreciated value of these machines was roughly £500,000.

The number of R.A.F. personnel killed and injured in flying accidents during the same period were 65 killed and 89 injured. In addition, two Army officers and two officers of the R.A.F. Reserve were killed. These casualties compared favourably with other countries.

R.A.F. SPORTS.

Inter-Services Lawn Tennis.

The matches in the Inter-Services Tennis Championships began at Wimbledon on July 12. The Army won four and lost four, and the Navy and the R.A.F. won and lost three each. The results were:—

SINGLES.—Pay Lt.-Cdr. R. E. Worthington (R.N.) beat Maj. J. R. Hartwell (Army) (9-7, 6-1); Flg. Off. C. F. Roupell (R.A.F.) beat Lt.-Cdr. P. F. Glover (R.N.) (5-7, 6-4, 6-3); Capt. H. T. S. King (Army) beat Eng. Lt.-Cdr. L. J. Carr (R.N.) (7-5, 6-2); Wing Cdr. H. J. F. Hunter (R.A.F.) beat Maj. Hartwell (Army) (6-8, 6-0, 6-1); Maj. R. Bernard (Army) beat Lt.-Cdr. Glover (R.N.) (6-0, 4-6, 7-5); Eng. Lt.-Cdr. Carr (R.N.) beat Flg. Off. E. J. Mockler (R.A.F.) (6-0, 6-4); Capt. H. T. S. King (Army) beat Flg. Off. E. J. Mockler (R.A.F.) (1-6, 6-1, 6-3); Paymaster Lt.-Cdr. R. E. Worthington (R.N.) beat Wing Cdr. H. J. F. Hunter (R.A.F.) (16-14, 6-2); Flg. Off. C. F. Roupell (R.A.F.) beat Maj. R. Bernard (Army) (6-2, 6-3).

DOUBLES.—Maj. N. G. Holmes and the Rev. W. H. M. Aitken (Army) beat Flt. Lt. C. E. Williamson-Jones and Flg. Off. Mockler (R.A.F.) (6-4, 6-4); Wing Cdr. R. E. Saul and Wing Cdr. Hunter (R.A.F.) beat Lt.-Col. A. Berger and Maj. Bernard (Army) (5-3, 1-6, 7-5); Maj. L. C. Owen and Capt. King (Army) beat Flg. Off. Roupell and Flt. Lt. J. Duminy (R.A.F.) (3-6, 6-0, 6-4); Pay Lt.-Cdr. Worthington and Lt. A. W. Buzzard (R.N.) beat Maj. Holmes and the Rev. W. H. M. Aitken (Army) (6-4, 6-4); Lt.-Cdr. P. F. Glover and Eng. Lt.-Cdr. L. J. Carr (R.N.) beat Lt.-Col. A. Berger and Maj. Bernard (Army) (6-3, 7-5); Flt. Lt. J. Duminy and Flg. Off. Roupell (R.A.F.) beat Lt.-Cdr. F. E. Chevallier and Lt.-Cdr. P. W. Bowyer-Smith (R.N.) (6-3, 6-2); Paymaster Lt.-Cdr. Worthington and Lt. A. W. Buzzard (R.N.) beat Flt. Lt. C. E. Williamson-Jones and Flg. Off. Mockler (R.A.F.) (6-4, 4-6, 6-2); Maj. L. C. Owen and Capt. King (Army) beat Lt.-Cdr. Chevallier and Lt.-Cdr. Bowyer-Smith (R.N.) (6-1, 6-3); Lt.-Cdr. Glover and Eng. Lt.-Cdr. Carr (R.N.) beat Wing Cdr. Hunter and Wing Cdr. R. E. Saul (R.A.F.) (13-11, 17-19, 6-2).

Armoured Car Sports at Kirkuk.

No. 6 Armoured Car Company, R.A.F., held their Annual Sports at Kirkuk, on May 28.

The Inter-Section Trophy was won by H.Q., with 32 points, A. and B. Sections tied for the second place with 21 points each. The meeting was organised by S.M. Stollery, who was also responsible for the excellent gymnastic display by the men of the Company.

The Tug-of-War was won by H.Q. with A. Section as runners-up. L.A.C. Woodford won the High Jump at 5 ft. 2 ins.

The Sports were followed by a successful concert given by the "Kar-optimists," a concert party run by the Unit.

The R.A.F. Memorial Fund.

The fourth Meeting of the year of the Executive Committee of the Fund was held at the offices of the Fund, on July 28, Lord Hugh Cecil, P.C., M.P., was in the Chair.

The usual financial statements were laid before the Committee, and the Honorary Treasurer took occasion to remark that it was regretted subscriptions and donations were coming in rather slowly.

The attention of the Committee was drawn to the laying of a wreath at the foot of the R.A.F. War Memorial on the Victoria Embankment, at 12 noon on July 2, by a deputation of Officers of the French Naval and Military Aviation Services, as a token of respect to the Fallen of the Royal Air Force, and a letter of warm appreciation of this kindly act was drawn up by the Chairman on behalf of the Committee.

An offer of help was received in respect to a proposed publication shortly of a series of poems and verses applicable to units of the Royal Air Force, any profits arising out of such publication being devoted to the purposes of the Fund. The offer was gratefully accepted.

The R.A.F. Swimming Association.

The R.A.F. Swimming Association Championships will be held on Sept. 24 at the Holborn Swimming Baths, Endell Street, at 8 p.m.

The following events will be contested:—

(a) 50 yards Individual Championship. (b) 100 yards Individual Championship. (c) Individual Diving Championship. (d) Individual Plunging Championship. (e) Unit Relay Race. (f) Unit Water-polo Final. (g) Inter-Services Invitation Relay Race.

Notes.—(e) and (f) are only open to Units affiliated to the Royal Air Force Swimming Association. (a) Events (a), (b), (c) and (d)—one representative from each district. Entrance fee 5s. each event. (b) Event (c)—Two plunges each competitor. (c) Event (d)—Three dives each competitor. (c) Event (e)—One Unit team from each district. Team to consist of four competitors, to swim one length each. Entrance fee 10s. (d) Event (f)—Unit Water-polo Championship, final round. Entrance fee 10s. (e) Entrance fees will only be charged against individuals and units swimming at the championship meeting.

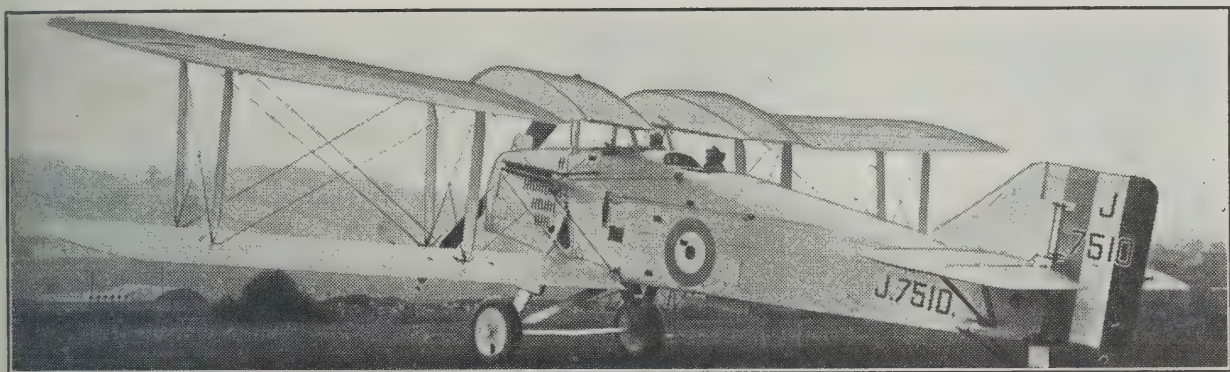
Entries, together with entry fees, must be forwarded to the Hon. Secretary, R.A.F. Swimming Association, by Sept. 1.

An R.A.F. Success.

L.A.C. S. Ferris, R.A.F., who won the Marathon Race for *The Sporting Life* Trophy this year, for the second year in succession, won the Sparta Club's international Marathon race at Copenhagen on Aug. 1.

L.A.C. Ferris covered 33.7 kilometres (just under 21 miles) in 2 hours 10 minutes 13 seconds. He wins the Frederiksborg Challenge Cup and the Sparta Club's Silver Medal.

WESTLAND



THE photograph is of the Yeovil Day Bomber, one of the latest machines built at the Westland Aircraft Works. It marks an important stage in the development of this type of aircraft possessing among its other features of superiority a good view for pilot and observer in all directions, stability (for accurate bombing), gravity feed of petrol from tanks in upper plane, and oleo-rubber undercarriage with wide track. It has a Rolls-Royce Condor Engine of 670 h.p. with Leitner-Watts metal propeller. The performance of the machine which was built for the Air Ministry is highly satisfactory.

At the Westland Aircraft Works, machines of all types have been designed and constructed for the British Government and for industrial purposes.

The personnel of these Works includes an expert staff which is available to consider specifications for aircraft required by Foreign and Dominion Governments or private customers. A fully equipped 4 foot wind channel is available for model experiments.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

A NEW LIGHT ALLOY.

Some considerable time ago it was recorded in this paper that certain German aircraft constructors had begun to use a new light alloy known as Lantal, in place of the more familiar duralumin. Lantal is a patent proprietary alloy made by Eisen and Metall-industrie G.m.b.H., of Bonn on Rhine, Germany, who have granted rights in the alloy for the British Empire to Lavino (London), Ltd., of 48, Fenchurch Street, London.

Lantal is an Aluminium Copper Silicon Alloy (Copper 4%, Silicon 2%, remainder commercial Aluminium), with a specific gravity of about 2.75, which, when pressed or rolled and suitably heat-treated, possesses excellent mechanical properties. It differs from the more usual aluminium alloys of high strength in that it does not harden automatically at normal temperature after the annealing treatment. Consequently, Lantal can be purchased in the soft condition, kept in stock indefinitely, and worked to shape as required, and then hardened to the required degree. The usual "age" hardening alloys must be annealed immediately before working, and all the necessary bending, pressing, or drawing operations must be completed within a very short time of the metal's emergence from the annealing furnace or bath—which is often distinctly inconvenient, and sets a definite limit to the utility of these materials.

Lantal is produced in the form of sheets or strips, wires, rods, tubes, or other drawn sections, and as forgings. As the physical qualities of the alloy depend upon the extent to which the finished article has been worked—i.e., forged, pressed or rolled—from the original ingot, the strength and ductibility of the material depends on the thickness of section, and the thinner sections are therefore invariably stronger than the thicker ones.

It is supplied in different states to suit the convenience of customers. These states, in the case of sheet, strip, or wire, are the normal, the unhardened, the soft annealed, and the hard drawn or rolled. Any of these states may readily be converted to any other by heat treatment and working. Generally speaking, the unhardened state is recommended for general use. Heat treatment may be carried out in a salt, oil or air bath, depending on circumstances—the maximum temperature required being about 500°C. for annealing.

Normal quality sheet has a tensile strength of 24 to 27 tons per sq. in. (depending on thickness), a yield point of 13.7 to 17.14 tons with elongation of 18% to 25% and Brinnell hardness 90 to 100. In this state the material may be bent to radii of $2\frac{1}{2}$ times thickness.

The unhardened quality has ultimate strength 19 to 22 tons, yield 10 to 11.5 tons, elongation 18% to 25%, Brinnell hardness No. 70 to 80. May be bent, rolled or drawn to radii of $1\frac{1}{2}$ times thickness, and may then be given "Normal" physical qualities by heating for 16 hours to 120° to 130°C.

Soft annealed Lantal has ultimate strength 14.6 tons, yield 4.6 tons, elongation 22% to 28%, and Brinnell hardness 50 to 55. In this state deep drawing or pressing is possible provided that the material is reannealed as soon as it becomes hardened at between 350°C. and 400°C.

Hard rolled or drawn sheet—which is produced only in thicknesses between .0117 and .117 inch—is very hard and brittle, and cannot be bent. The ultimate strength is 28.6 to 38 tons, yield 25.4 to 37.5 tons, elongation 15% to 3%, and Brinnell hardness 100 to 135. High strength and small elongation correspond to the thin sheets.

Rods, plates and forgings are produced in two qualities, A and B. A with an ultimate strength of 24 to 26.6 tons, a yield of 13.7 to 17 tons, and elongation 10% to 18%. Quality B has ultimate strength 21 to 24 tons, elongation 18% to 25%, and yield 12.7 to 15.87 tons. The difference between the two qualities is again a difference of heat treatment, quality A being produced by heating to a higher temperature for a longer period than for quality B. Lantal is forged at between 440° and 480°, and after working may be returned to A or B conditions by appropriate treatment.

Drawn sections and tubes are produced in qualities A and B corresponding to those described above.

Heat treatment for all of these forms of Lantal consists of annealing by heating to 490° to 510° and quenching in cold water. It is then hardened in an oil or air bath at temperatures varying from 120° to 150°C. for from 16 to 48 hours according to the ultimate strength required.

Lantal may be cut with normal metal-working tools with facility but must be kept at a temperature below 160° in the process. It may be ground and polished easily, can be soldered or welded, though neither process is recommended. Rivetting must be carried out cold.

An alloy, known as L.IV, which is actually of the same composition as Lantal, is supplied for casting. Naturally it has not the strength of the worked material, but it compares favourably with other cast aluminium alloys, and can be improved by heat treatment after casting. Unheated sand castings give a tensile strength of 7.6 to 11.4 tons, and die castings of 10.2 to 12.7 tons. Heat treatment will increase these values by some $2\frac{1}{2}$ to 5%.

Complete instructions for the working of the material may be obtained from Lavino (London) Ltd., to whom also should be addressed inquiries for licences to manufacture Lantal.

THE FIAT A.20 ENGINE.

A new type of aero-engine, evidently inspired by an effort to reach American compactness and light weight, has recently been produced by the Fiat Co., of Turin, and has successfully passed its tests, including an endurance test of 75 hours non-stop, at a rated h.p. of 410.

The engine is of the 12-cylinder Vee-type with carburettor between the cylinders. Separate steel cylinders, with individual sheet-steel water-jackets, are employed, and each cylinder has four valves. The overhead camshafts are carried in aluminium alloy casings, which tie the cylinder heads together.

The engine is of small over-all dimensions—except for a slightly increased over-all length it is smaller than the Curtiss D.12, is very light, and is said to have given very small fuel consumption on its trials.

SPECIFICATION.

| | |
|--------------------------------|--------------------------|
| Bore | 115 m/m. (4.54 in.) |
| Stroke | 150 m/m. (5.9 in.) |
| Rated output | 410 h.p. at 2,060 r.p.m. |
| Maximum output | 420 h.p. at 2,200 r.p.m. |
| Weight (including water) | 320 kg. (705 lbs.) |

TWO NEW DORNIER AEROPLANES.

The Dornier Do.F is a land version of the famous Dornier Wal and as a commercial machine has accommodation for 16 passengers and two pilots. It is fitted with two 650 h.p. Rolls-Royce Condor engines driving tandem airscrews.

SPECIFICATION.

| | | | |
|-----------------|------------|-------------------|-------------|
| Span | 28.5 m. | Weight empty ... | 5,100 kgs. |
| Length | 19.85 m. | Normal load | 3,250 kgs. |
| Height | 6.15 m. | Speed | 175 km.p.h. |
| Wing area | 143 sq. m. | | |

A similar version known as the Do.N. is being built under license by the Kawasaki Dockyard Co. Ltd., of Kobe, Japan, and also by the Aktiengesellschaft für Dornier-Flugzeuge, Altenrhein, Switzerland.

Following on the removal of restrictions regarding aircraft building in Germany, a large flying-boat, known as the Superwal is now being constructed at Friedrichshafen. It is of similar construction to the Wal, but will be equipped with two 650 h.p. Rolls-Royce Condor engines in tandem and will be capable of carrying twenty-one passengers in two separate cabins. The machine will have a petrol capacity sufficient for a flight of 2,000 kms.

SPECIFICATION.

| | | | |
|-----------------|------------|--------------------|-------------|
| Span | 28.5 m. | Weight empty | 5,800 kgs. |
| Length | 24.6 m. | Normal load | 3,000 kgs. |
| Height | 5.2 m. | Maximum load ... | 3,500 kgs. |
| Wing area | 143 sq. m. | Speed | 180 km.p.h. |



THE LATEST DORNIER.—The Do.F twin-engined commercial monoplane (two 650 h.p. Rolls-Royce Condor engines) which has accommodation for sixteen passengers and two pilots.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ALBATROS L.73.

The Albatros L.73 is a twin-engine passenger-carrier designed for operation on night service by the Deutsche Lufthansa. As may be seen in illustrations, this machine is a very clean but conventional biplane design, which is structurally interesting in that it is entirely of metal with the exception of fabric covering.

The fuselage—of rectangular section, with a slightly domed top—is of welded steel tube with rigid Warren-type bracing. Side-by-side seats for two pilots are arranged in the nose, and fitted with complete dual control. This cockpit is covered and has a fixed front windscreen, but is open at the sides. A Telefunken wireless outfit is carried, and the machine is equipped with a Rosenbaum Gyrorektor—a gyroscopic turn indicator combined with cross and fore and aft levels.

The cabin is 1.5 m. (4 ft. 10 in.) wide, 1.75 m. (5 ft. 9 in.) high and 5.5 m. (18 ft.) long. It has armchairs for eight passengers, and four of these are convertible to two sleeping bunks. Each seat has its own openable window, and a hot-air supply is provided. There is the usual lavatory and luggage compartment at the back of the cabin.

Both top and bottom wings are in three sections, the lower centre section being continuous across the fuselage. Wing spars are Warren girders, built up of duralumin angle-sections, and the ribs are of thin-walled steel tube, also Warren-braced. The engine mountings are carried on the outboard side of the interplane struts at the end of the centre section. The engines project well ahead of the wings, and are arranged to be detached with their bearers, etc., after undoing three nuts and pipe and control connections. Radiators are carried on the front interplane strut above the engine, and each engine has its own petrol tank in the upper wing above it. The outer wing sections are braced in one bay on each side with N-type interplane struts.

The ailerons do not project to the wing tip, and are so arranged as to open a Handley Page slot when they are pulled down.

The undercarriage consists of a single V beneath each engine mounting, and a half-axle supported by the V and hinged at the bottom edge of the fuselage. Each V has a telescopic front leg, with compression rubber and oil dash-pot shock-absorbers. 1,300 x 300 m/m. tyres are fitted.

The tail unit is almost devoid of external bracing, and like the rest of the structure is metal framed. The rudder alone is balanced.

The machine is fitted with two B.M.W.IV engines of 240 h.p. each, and is said to fly on one engine. The performance figures given however substantiate this claim only with half the full pay-load. With this reduced loading the total weight represents 20 lbs. per normal h.p.—which sounds a remarkable result—but it is to be remembered that the B.M.W.IV engine is of the super-compressed, over-dimensioned type, and although 240 h.p. is the maximum output that can be maintained continuously with safety, 300 h.p. can be developed for short bursts. Even if level flight is only maintained by using this excess power, the power-loading is 15 lbs. per h.p. (counting both engines).

Span ... 19.7 m. (64 ft. 8 in.) Length ... 14.6 m. (47 ft. 0 in.)

Height ... 4.7 m. (15 ft. 6 in.)
Wing area 92 sq. m.
(990 sq. ft.)
Weight, empty 3,024 kg.
(6,666 lbs.)
Pay load ... 800 kg. (1,764 lbs.)
Weight, loaded ... 4,610 kg.
(10,163 lbs.)
Engines Two B.M.W.IV
240 h.p. each.
Wing loading ... 50 kg./sq. m.
(10.3 lbs./sq. ft.)

Power loading (480 h.p.)
10 kg./h.p. (22 lbs./h.p.)
Fuel capacity ... Four hours.
Max. speed 145 km./h.
(90 m.p.h.)
Speed, one engine, and
4,210 kg. (9,272 lbs.)
loaded weight ... 110 km./h.
(68 m.p.h.)
Landing speed 95 km/h.
(60 m.p.h.)
Climb to 1,000 m. (3,280 ft.)
14 mins.

THE FIVE-ENGINED PENHOET SEAPLANE.

The large five-engined flying-boat constructed by the Chantiers de Penhoët of Saint Nazaire, which has previously been mentioned in these pages, made her first flight from the Loire on Saturday, June 26, piloted by Duhamel. This flight was merely a short straight. Further trials by the same pilot were made on July 1, but were concluded by an imperfect alighting which damaged the fore part of the hull. The damage is said to be slight and repairs are expected to be complete within a very short time.

The machine is a large cantilever monoplane with a single central hull, fitted with five Gnôme-Rhône Jupiter engines of 420 h.p. each, distributed along the span of the wings, driving tractor airscrews. The wings and tail surfaces are of normal fabric and timber construction, and the hull is largely of ply-wood. Such dimensions, etc., as are available are tabulated in the specification.

From the account given concerning the accident above mentioned, it appears that the machine is distinctly sluggish in answering controls at low speed with engines off. It appears that a number of successful alightings were made with engines running, but that on the first attempt to alight with engines throttled right down, the pilot failed to flatten out properly, and drove the bows of the hull into the water.

Span 40 m. (131 ft.)
Length ... 27 m. (88 ft. 9 in.)
Height 7.75 m.
(26 ft. 4 in.)
Wing area 270 sq. m.
(2,900 sq. ft.)
Engines Five Jupiter,
420 h.p. each.

Weight loaded 16,000 kg.
(35,200 lbs.) (approx.)
Wing loading 59 kg./m².
(12.2 lbs./sq. ft.)
Power loading ... 7.6 kg./h.p.
(16.7 lbs./h.p.)
Estimated top speed
160 km./h. (100 m.p.h.)



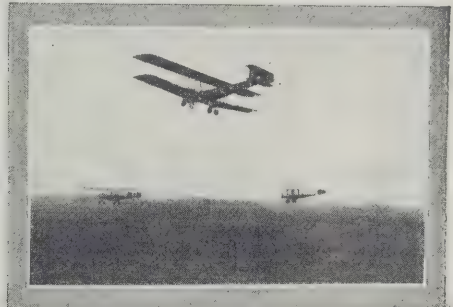
THE ALBATROS L.73.—Side and three-quarter front views of the new twin-engined night flying passenger-carrier designed for use on the German air lines.



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Extract from :-

OFFICIAL  REPORT.

Parliamentary Debates

HOUSE OF COMMONS.

VOL. 192. No. 18. THURSDAY, 25th FEBRUARY, 1926.

"The SECRETARY of STATE for AIR (Sir Samuel Hoare):

Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing.

Lieut.-Commander BURNEY: With full service load.

Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance of about 800 miles, spending as much as 12½ hours continuously in the air

LENGTH OVERALL ... 50'-7"

HEIGHT OVERALL ... 17'-3"

SPAN (SPREAD) .. 86'-6"

SPAN (FOLDED) .. 44'-3"

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FLYING CLUBS.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Aug. 1.

Time flown:—LX 21.05, LY 16.10. Total 37 hrs. 15 mins. Dual 23.05, Solo 12.40. Passenger 1.30.

The following members flew under instruction:—Mrs. Marcks, Miss Leathart, Col. Sir Joseph Reed, Messrs. Phillips, Middleton, E. C. Kennedy, Irving, Stawart, Palmer, W. Todd, Thirlwell, Howard, Davidson, Bruce, Campbell, Sandilands, Shaw, J. Bell, George and Phillips.

The following members also flew:—Mr. W. Baxter Ellis with Mr. F. H. Phillips. Mr. R. N. Thompson with the following passengers:—Mr. J. Towers, Mr. C. Rutherford, Mr. E. Gibb, Mr. A. Thompson, and A. Bell. Mr. N. S. Todd with Miss Howard and Mr. W. Todd. Solo practice:—Dr. Dixon, Mr. Smith, Mr. F. H. Phillips and Mr. C. Thompson.

The following had joy-rides:—Mr. Robson, Mr. Farnsworth, Mr. Hayden and Miss Gieriot.

During the week the following members completed the tests for their Pilot's Licences, all completing in a satisfactory manner:—Dr. Dixon, Mr. F. H. Phillips, Mr. L. Smith, and Mr. C. Thompson, Junr. This, of course, is a record for the Club for any one week and it is hoped that several others will qualify at an early date.

It became necessary on Thursday night to take out the engine from LY for top overhaul, otherwise the total amount of flying would have been much greater as excellent weather and a good turn up of members would have assured this.

[Reports from the other Clubs have failed to materialise up to the time of going to press owing to the intervention of the holidays.—ED.]

A BOURNEMOUTH AVIATION MEETING.

On Aug. 21-22 the Royal Aero Club are organising a Summer Aviation Meeting to be held at the Emsbury Park Racecourse, Bournemouth.

The following is the list of events provisionally fixed for the two days:—

1. Light Aeroplane Club Instructors' Scratch Race.—Open to standard D.H. Moths from each approved Light Aeroplane Club to be flown by pilot instructors of the Club. First Prize £20. Second Prize £10 if four or more start.

2. Private Club Handicap.—Open to any type of aeroplane entered by any recognised Flying Club other than the approved Light Aeroplane Clubs. Pilot must be a member of the Club entering. First Prize £25. Second Prize £10 if four or more start.

3. Bournemouth Summer Handicap.—Open to any type of aeroplane. First Prize £100. Second Prize £30 if six or more starters.

4. Light Aeroplane Club Members' Scratch Race.—Open to the approved Light Aeroplane Clubs. Each Club must be represented by standard D.H. Moths owned by the Club, and the pilots must be members and have been entirely trained by the Clubs. First Prize £20. Second Prize £10 if four or more starters.

5. Christchurch Sprint (Scratch Race).—Open to standard D.H. Moths. First Prize £25. Second Prize £10 if five or more starters.

6. Private Owners' Handicap.—Open to all aeroplanes privately owned and registered in the name of the individual. First Prize £40. Second Prize £20. if four or more starters. Third Prize £10 if six or more starters.

7. Boscombe High-Power Handicap.—Open to all aeroplanes with engines of 100 h.p. or over. First Prize £30. Second Prize £10 if five or more starters.

8. Emsbury Park Low-Power Handicap.—Open to all aeroplanes with engines under 100 h.p. First Prize £20. Second Prize £10 if five or more starters.

Bomb-dropping Competition.—First Prize £10. Second Prize £5.

Events 1, 2, 5, 7 and 8 will be flown over a 10-mile course and Events 3 and 6 over a 20-mile course. The particulars of these courses will be announced later.

The entry fee for each race will be 10s., and this fee, together with the entry form, must be received by the Royal Aero Club not later than 17.00 hours on Friday, Aug. 13. There is no entry fee for the Bomb-Dropping Competition.

There is practically no shed accommodation on the racecourse, and if machines require pegging down, competitors are advised to take their own tackle. There will be shed accommodation for a limited number of folded Moths, which will be allocated in order of arrival.

Racing will begin each day at 14.00 hours.

Full particulars of this Meeting, together with entry forms, may be obtained from the Secretary, The Royal Aero Club, 3, Clifford Street, London, W.1.

SEVEN NEW WORLD'S RECORDS.

During the last few days of June a Dornier Mercur single-engined monoplane put up seven new World's Records carrying useful loads of 500 kgs. and 1,000 kgs.

As Germany does not yet belong to the F.A.I. it was necessary to make the record attempts in Switzerland in order that they may be officially homologated, and the services of M. Mittelholzer were secured to carry out the flights.

The records obtained were:—

With 500 kgs. useful load:—Duration: 14 hours 43 mins. (60 per cent. gain over previous record); Distance: 2,300 kms. (140 per cent. gain over previous record); Speed: 164 km.p.h. over 2,000 kms.

With 1,000 kgs. useful load:—Duration: 10 hours 5 mins. (170 per cent. gain over previous record); Distance: 1,400 kms. (600 per cent. gain over previous record); Speed over 500 kms and 1,000 kms.: 162 km.p.h.

The Dornier Mercur is the latest development in Dornier land aircraft and was only produced a few months before the above records were obtained. It is a natural development of the Komet III but is fitted with the new 460 h.p. B.M.W. VI twelve-cylinder water-cooled engine and has accommodation for 8-10 passengers.

For long-distance flights it is fitted with dual control and adjustable seats for two pilots.

The normal fuel capacity is 840 litres, which is sufficient for a range of 1,200-1,400 kms.

The dimensions of the passenger cabin are: 3.05 m. length, 1.27 m. height, and 1.45 m. width. There are two luggage compartments with a total cubic capacity of 1.5 cub. m., one in front and one in rear of the cabin.

SPECIFICATION.

| | | | |
|--------------------|---------------------|-------------------------|-------------|
| Span | 19.6 m. | Weight loaded ... | 3,300 kgs. |
| Length | 12.43 m. | Speed, max. ... | 200 km.p.h. |
| Height | 3.46 m. | Ceiling | 6-7,000 m. |
| Chord | 3.26 m. | Climb with normal load— | |
| Wing area | 62 m ² . | to 2,000 m. | 6 mins. |
| Weight empty | 2,100 kgs. | to 3,000 m. | 8 mins. |
| Normal load | 1,200 kgs. | to 4,000 m. | 11 mins. |
| Max. load | 1,700 kgs. | | |

GERMAN AIRSHIPS.

The Berlin correspondent of *The Times* of June 7 states:—

Speaking at Jena last week, Dr. Eckener, the airship designer, said that now that the restrictions on German aircraft construction had been removed there was no absolute necessity to use the new 100,000 cubic metre Zeppelin airship now being built at the Friedrichshafen works for Polar exploration.

He said that the airship was to be equipped with engines of a new type driven not solely by petrol, but by a newly-discovered gas possessing the specific gravity of air. The advantages would be less danger of fire, a considerable reduction in weight, greater reliability, and, in consequence, an increase of about 20 per cent. in efficiency.

[Presumably the first paragraph means that the new airships could be used for internal purposes, and/or that larger ships may now be built for exploratory and other purposes. The meaning of the second paragraph is far from clear, it is possibly a reference to the use of hydrogen as part fuel which has been misunderstood or misinterpreted.—ED.]

WHY WE ARE VERY YOUNG.

(With very real apologies to A. A. Milne.)

II.

HOPPITY.

William Sefton goes
Hoppity, hoppity,
Hoppity, hoppity, hop.
Whenever I tell him
It's ten bob a landing, he
Says he can't possibly stop.

If he stopped hopping he wouldn't fly anywhere,
Poor D. of C. A., he
Couldn't fly anywhere.
That's why he always goes
Hoppity, hoppity,
Hoppity, hoppity,
Hoppity,
Hoppity,
Hop.

G. D.

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COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 31; Tuesday, 28; Wednesday, 29; Thursday, 33; Friday, 30; Saturday, 31; Sunday, 18.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 113, passengers 810, freight 21 tons.

AIR UNION:

Paris—London: Machines 50, Passengers 287, freight 15 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 24, passengers 118, freight 2 tons.

SABENA:

Brussels—London: Machines 12, passengers 65.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 0, passengers 0.

PRIVATE:

Machines 1, passengers 0.

Total number of trips by British Machines, 114, carrying 810 passengers. Foreign machines, 86, carrying 468 passengers.

Comparative Figures:

Week ending Aug. 1:

Machines, 200; Passengers, 1,278; Crews, 250; Total personnel, 1,528.

Corresponding week, 1921:

Machines, 136; Passengers, 668; Crews, 197; Total personnel, 865.

Corresponding week, 1924:

Machines, 173; Passengers, 816; Crews, 213; Total personnel, 1,020.

Corresponding week, 1923:

Machines, 139; Passengers, 730; Crews, 224; Total personnel, 951.

Corresponding week, 1922:

Machines, 161; Passengers, 468; Crews, 266; Total personnel, 734.

Corresponding week, 1921:

Machines, 107; Passengers, 470; Crews, 132; Total personnel, 602.

Corresponding week, 1920:

Machines, 104; Passengers, 212; Crews, 131; Total personnel, 343.

CROYDON NOTES.

The Argosy has made her maiden trip to the Continent. The machine which was on view at the Pageant, G-EBLF, belonged to the Air Ministry, and no doubt it will languish at Martlesham, "that indecisive country from whose bourne no aeroplane returns," until it is out of date. The second of the species, G-EBLO, was delivered at Croydon early last week, and on Thursday, with eighteen passengers and with Mr. Barnard as the Argonaut, she set sail for the ad-Jason-t country of France, evidently thinking that there was not enough golden fleecing of the population there. However she found the franc on the upward grade, and, apparently satisfied, she returned. As she carried twenty passengers she does not seem to Me/dea at the price. A member of the

Jewish tribe regarding her for the first time said, "She Ith ca-lothal machine." (Sorry everyone, but it's the heat.)

Anyway the Argosy seems to be a thoroughly good aeroplane, and the fact that she flew to Paris on her maiden trip with 18 passengers in 1 hr. 51 mins., and returned later in the day with eleven passengers and a heavy load of freight in 2 hrs. 33 minutes, shows that she has a thoroughly good performance too.

Lt.-Col. G. L. P. Henderson is much in evidence at Croydon these days. He has bought a couple of Renault Avros and on these he carries out instruction from dawn until 09.0 hrs. He then goes up to town to his office, and in the evening returns to Croydon and carries on more instruction work.

The four-engined Bleriot, having completed 100 hours' experimental air-line work, is now doing regular air-line work. One saw her take off recently, like a scout, with 15 passengers up. And she only has four 230 h.p. Renaults, so that she is about the same horse power as the W.10.

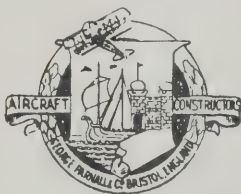
Lt.-Col. Minchin and the Bristol Bloodhound (Jupiter VI) are girding up their loins for further activity. The next item on the programme is a flight to Stockholm in the day.

Major Brackley and the Supermarine Swan, which was hired by his uncle-in-law, Mr. R. Mond, flew with ten passengers to the Channel Islands and on to Dinard for the week end. This seems an excellent way of making short holiday go a long way.—G. D.

HOLIDAY SERVICES.

The ever-enterprising Mr. Leslie Hamilton has now acquired a Vickers Viking (Napier), G-EBED. This machine, it may be remembered, operated for some time in Spain a year or so ago. Mr. Hamilton is taking *Daily Mails* every morning from Southampton to Jersey. He made his first trip on August Bank Holiday. His start was delayed by fog, but in spite of this he reached Jersey by 09.15 hrs. He made the return journey in the afternoon, reaching Southampton at 16.00 hrs. One met him in mid-Solent as he passed over on his return when one was conveying the Morris Cxford and Asquith from Vectis to the mainland in a barge and with lamentable lack of respect he failed to notice one or to salute in the approved manner.

Mr. Dudley Travers, who hires the red D.H.9 belonging to the British Insurance Group, is delivering *Daily Mail* from Lympne to Ostend. Mr. George Bradly, late of A.T. and T., the Instone Air Line, and of Skywriting fame is co-operating with him by bringing the papers from London to Lympne by car in the wee sma' hours of darkness so that Mr. Travers can get away from Lympne at crack of dawn.—G. D.



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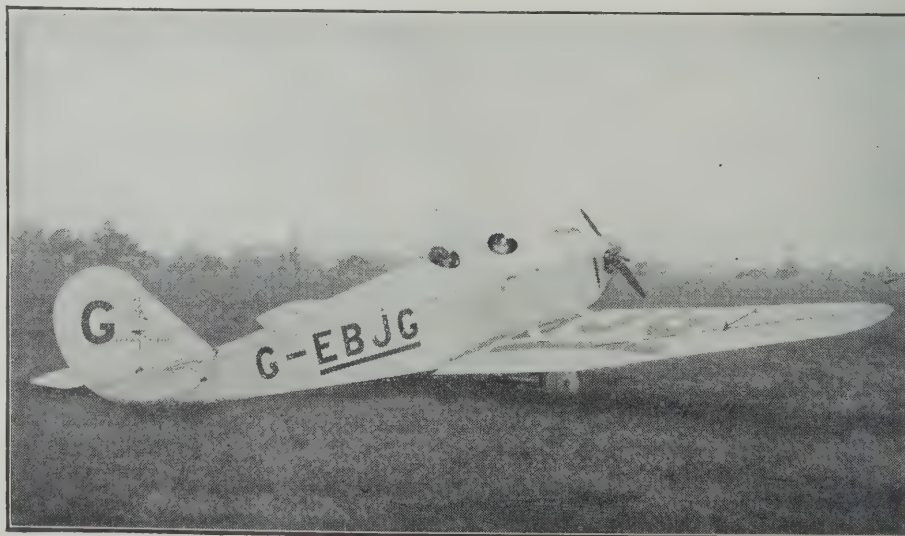
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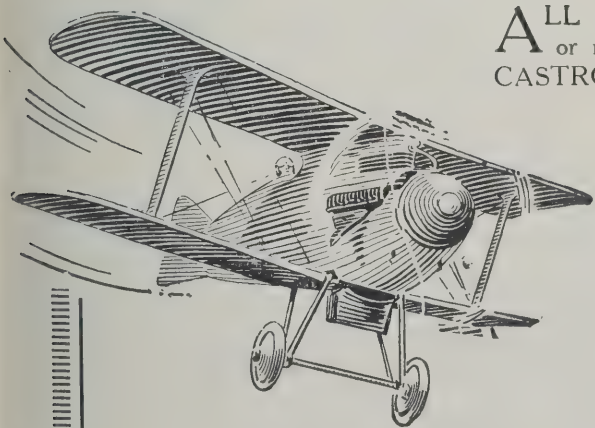
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We are writing to inform you that we have examined the four Fairey III.D aircraft after their successful termination of the Cairo—Cape—Cairo—London flight under Wing Commander C. W. H. Pulford, O.B.E., A.F.C., R.A.F., and find that the Cellon Dope was in excellent condition throughout and showed no signs of cracking or peeling.

Furthermore, all fabric-covered surfaces were still quite taut and in substantially the same condition as when they left our works.

During this flight of over 14,000 miles the aircraft remained in the open over almost the entire period and were subjected to extreme variations in climatic conditions.

For THE FAIREY AVIATION CO. LIMITED.

(Signed) M. WRIGHT, Director.

July 13, 1926.

VICKERS' APPOINTMENTS.

Mr. A. Cartwright has been appointed a Director of Vickers Ltd. Mr. G. G. Sim has been appointed Secretary of Vickers Ltd.

NEW COMPANIES.

HAMPSHIRE AEROPLANE CLUB LTD.—Private Co. Registered July 5. Capital, £100 in £1 shares. Objects: To promote, assist and encourage aerial navigation in all its forms, and the study of aeronautics, also the development of all sciences connected therewith and the construction of aerial conveyances of all kinds, etc.

The Directors are: R. H. Bound, address not stated. A. N. Clifton, 49, Bugle Street, Southampton. R. V. Perfect, address not stated. O. E. Simmonds, Holmfels, Woolston, Hants. A. R. Van den Bergh, address not stated.

Qualification: One share. Remuneration: As fixed by the Company. Secretary: J. R. Hillair-Brady. Solicitors: C. C. Sharp, 36 and 37, High Street, Southampton. Registered Office: St. Michael's Chambers, 126, High Street, Southampton.

MORTGAGES AND CHARGES.

CENTRAL AIRCRAFT COMPANY LTD.—Particulars filed of £4,000 debentures authorised June 28, 1926, charged on the Company's undertaking and property, including uncalled capital, the whole amount being now issued.

MIDLAND AERO CLUB LTD.—Agreement to issue debenture containing a charge dated June 17, 1926, to secure not more than £2,000, charged on such of the Company's property, present and future, as may have been or may be purchased, in whole or in part, either with money supplied by the President of the Air Council or with money received by virtue of any insurance (other than Third Party or Employer's Liability Insurance) effected by the Company by virtue of any such insurance until the same shall have been laid out by the Company in making good the loss or damage in respect of which it is received by the Company. Holder: President of the Air Council.

YORKSHIRE AEROPLANE CLUB LTD.—Agreement to issue a debenture dated June 18, 1926, to secure not more than £2,000, charged on such of the Company's property, present and future, as may have been or may be purchased in whole or in part either with money supplied by the President of the Air Council or with money received by virtue of any insurance (other than Third Party or Employer's Liability Insurance) effected by the Company by virtue of any such insurance until the same shall have been laid out by the Company in making good the loss or damage in respect of which it is received by the Company. Holder: President of the Air Council.

PERSONAL NOTICES.

DEATH.

DALTON.—On July 27, off the coast of Brittany, while attempting to save a bather in difficulties, Henry Dalton, aged 25. He was employed by the Air Ministry at Farnborough, and was official handicapper for the last King's Cup Race.

MARRIAGES.

AIREY—SPEARING.—On July 28, at Twickenham, Flg. Off. James Lionel Airey, D.F.C., R.A.F., eldest son of Mr. and Mrs. James A. Airey, of Kew Gardens, to Kathleen Elizabeth Spearing, eldest daughter of Mr. and Mrs. Walter E. Spearing, of Twickenham.

PLENDERLEITH—PASSMORE.—In London, on July 31, Flt. Lt. W. N. Plenderleith, R.A.F., eldest son of William Plenderleith, of Sunwick, Berwick-on-Tweed, to Dorothy, youngest daughter of the Rev. and Mrs. J. Passmore, of Madras, India.

SUTHERLAND—RUSH.—On July 27, at St. Paul's Church, Bedford, Flt. Lt. Robert Bruce Sutherland, D.F.C., eldest son of Mr. and Mrs. Donald Sutherland, of Ingersoll, Ontario, to Eileen de Mairis, only daughter of Mr. and Mrs. Charles D. Rush, of St. Michael's Road, Bedford.

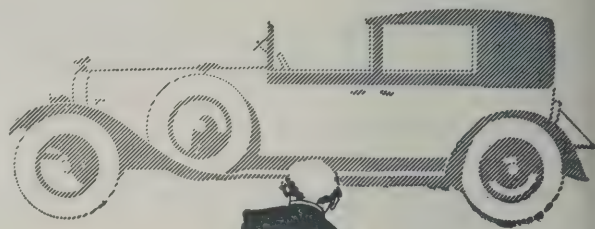
BIRTHS.

CAVE-BROWNE-CAVE.—On July 29, at 21, North Side, Streatham Common, S.W.16, to Wing Cdr. and Mrs. T. R. Cave-Browne-Cave, R.A.F.—a son.

DICKINSON.—On Aug. 2, at Durlay, Palfrey Close, St. Albans, to the wife of Flg. Off. Vincent N. Dickinson, Reserve of Air Force Officers—a daughter.

GNOSPILIUS.—On July 29, at Kendall, to Barbara (née Collingwood) and Oscar Gnospius—a daughter.

STOKES.—On July 22, at "Corrie," Wintonhill, Stockbridge, to Lilian Frances, wife of Capt. H. A. Stokes, Education Officer, R.A.F.—a son.



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THE AEROPLANE

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Edited by
C. G. Grey

Vol. XXXI. No. 6.

SIXPENCE WEEKLY.

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(Kipling.)

SEP 2 1926

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A WINTER PURSUIT.—Curtiss P.W.8 single-seat biplanes (400 h.p. Curtiss D.12 engines) belonging to the 1st Pursuit Group, U.S. Army Air Service, mounted on skis and operating from the frozen surface of Lake Van Ethan during the 1925-26 winter manoeuvres at Camp Skeel, 200 miles north of the Group's base.

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ON CIVIL AVIATION AGAIN.

Owing to the facts that it is relatively impossible for two persons to eat one dinner, and that the accommodation at the Royal Aero Club is limited to sixty eaters, and that 120 into 60 won't go, and that one delayed till too late asking to be allowed to be one of the privileged sixty, one was unable to be present at the Royal Aero Club's fourth House Dinner, when Civil Aviation was discussed. Consequently one was debarred from hearing the crumbs of wisdom which fell from the rich men's table—rich in knowledge rather than in lucre, if one may believe the plaints of aircraft constructors when pressed to spend money on air sport or propaganda.

That discussion was duly printed in the form of an antiphonic chorus by William H. Sayers and Geoffrey Dorman. The notes that follow are one's own reflections on the subject, untinged by what was said at the Aero Club and unlimited by the rule which asks speakers to stop talking after ten minutes each. But they are considerably influenced by the spread of civil aviation in the States, as disclosed by Mr. Lester D. Gardner in *Aviation* recently. These notes are in fact what one would like to say in public if one had the knack of thinking and talking when on one's hind legs—which one has not.

WHAT IS CIVIL AVIATION?

Civil Aviation may be divided into three main branches thus:—(A) Air line work, (B) Commercial flying, (C) Sporting flying.

Air line work is not as yet a commercial proposition. That is to say no air line has yet run a regular service without some sort of Governmental support, either in the way of a direct subsidy, or a postal contract, or a free issue of material, or something of that sort. Therefore one does not propose to discuss air lines at length.

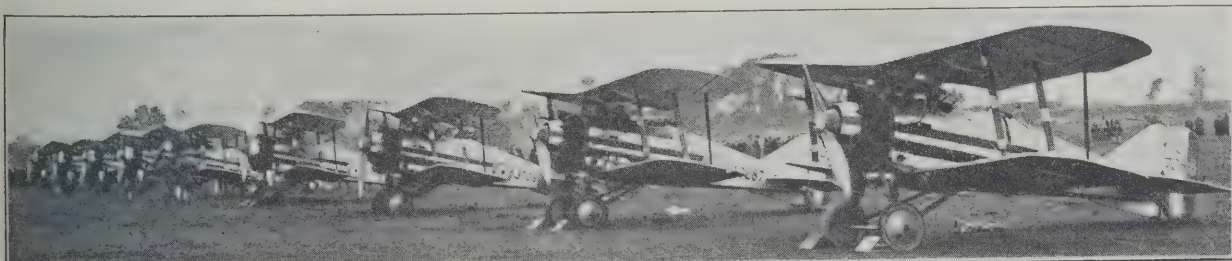
There are aeroplanes which will pay for their own running costs if fully loaded every trip, or nearly so, at what are to-day considered reasonable fares for passengers and goods. But as air lines must run to schedule time, with or without

passengers and goods, a pay-load cannot be assured every trip. And so air liners (giant or otherwise) must be considered as national assets, or liabilities, in the luxury-necessity class, along with high-speed express trains, "ocean greyhounds," Government departments, and other things which cost a lot more money than they can earn or are really worth, although, in the words of the old song, "You have to have 'em, whether you like 'em or not."

Commercial flying is another matter. It includes air surveying, which is the cheapest and quickest form of map-making; forest patrols, which save their cost a dozen times over in a year; and special chartering of aeroplanes for special journeys, which may save money to the business man who hires the machine and certainly is a commercial proposition to the firm from which the machine is chartered. Also one may include in real commercial aviation some forms of air line activity.

For example the extraordinarily punctual and efficient New York—San Francisco air mail service is commercial because, although it is supported by the U.S. Post Office, its commercial value in accelerating business more than covers its cost. And the two Australian air lines are commercial, because although they draw subsidies they accelerate communication between districts which before had no connection. And the Czechoslovak air lines which are now being reorganised in collaboration with the Aircraft Operating Co., will be commercial propositions for precisely the same reason,—of which more will be said later. Also the German Scadta line up the Magdalena River in Colombia is a commercial success.

Sporting flying is itself of various kinds. The greater proportion of it is done in the form of what we call "joyriding," or what the Americans call "gypsy flying." A firm like the Berkshire Aviation Tours, with its 32,000 passengers in one year, or the Cornwall Aviation Co., with some 10,000 passengers on one machine in less than a year, provides more sport for the people of this country than all the Light Aeroplane Clubs can do for some time to come.



TEACHING THE OLD IDEA.—In a praiseworthy endeavour to instil "airmindedness" into the people who matter in this country, No. 25 Fighter Squadron, R.A.F., on Gloster Grebes, gave a demonstration to the grave and reverend members of the British Association assembled in solemn conclave at Oxford last week. Here are seen the machines and personnel of the Squadron. The number of N.C.O. pilots, in a fighting squadron, is noteworthy.

Joy-riding is in fact a combination of sporting flying and commercial flying. It is commercial (and a paying proposition at that) for the owners of the machines. And it is sport for those who pay.

Then there are a few, a very few, private owners of aeroplanes, who fly for love of flying—all honour to them. They are now running a little club of their own, membership of which is confined to private owners of aeroplanes. And it is doing good work.

And lastly there are the Light Aeroplane Clubs, few in number, short of machines, and small in membership as yet, but with vast possibilities if properly handled. One regards these clubs as being actually first and foremost in importance as they are the foundation from which the future progress of British Aviation must spring. And one proposes to discourse on them for a space.

CO-OPERATIVE FLYING.

Quite a long time ago one argued that flying could only become popular as a sport by making it co-operative. Personal ownership of an aeroplane, even for an owner-driver-enthusiast, is far too expensive for any but the favoured few.

The aeroplane holds a position halfway between the motor-car and the motor-boat. It can never be a poor man's vehicle, to be kept in a shed alongside an eligible villa and started from the front door thereof. It must be always kept at an aerodrome. So the aviator, whether owner or not, must go to the place from which he has to start, just as the owner of a motor-boat has to go to the dock where it is kept.

On the other hand, the aviator is not limited as to his course when once he has started, as the motor-boat owner is limited by rivers or coast-lines—even if he is one of the fortunate few who can keep his boat at the bottom of his own lawn. Nor is the aviator confined to roads as is the motorist. So his freedom of direction makes up for his limitation of starting place, and, to a certain extent, of landing places.

But, to get to his aerodrome the aviator needs a car. And there are very few men of aviating age who can afford to give £800 for an aeroplane and about the same sum for a car, and pay for maintaining both of them.

If a man has £1,000 to spare he buys the car and does without the aeroplane. And in these hard times there are mighty few young or youngish sportsmen with £1,000 to spare. There may be enthusiasts on that financial level who would pay £800 for an aeroplane and be content with a £200 car. But there are not enough of them to affect the market for aeroplanes and make the £800 aeroplane a mass-production job.

On the other hand there must be plenty of gilded or at any rate silver-gilt youth, of the type known in these days as "lads of the village," who, having paid £500 or £700 for a

speed-car, will cheerfully spend anything between £100 and £500 a year on flying.

And that is precisely where the Light Aeroplane Clubs come into the picture. They can provide co-operative flying at a price which gives the man of moderate means a chance of being an aviator.

THE OPPORTUNITY OF THE CLUBS.

The psychological aspect of co-operative flying is well worth studying by those who have the handling of the Light Aeroplane Clubs. For on a proper understanding of this the success or failure of the Clubs must largely depend.

The first fact to be grasped firmly is that flying as such is one of the most boring things in the World. Nothing is more tiresome than to sit behind an engine and just go on and on and on and on—like the tail of Terrible John—and only see what looks like a badly-drawn and carelessly-coloured map sliding underneath.

When once a man can fly decently there is nothing for him to do in the air. In motoring, especially on fast and narrow roads, there is always an element of sport in getting round corners and wondering whether the man in the other car is a bigger or less fool than oneself. But flying, except for getting off and landing, or finding one's way in bad visibility, is rather less exciting than driving on a dry day when there is no other traffic on it on one of those ghastly new arterial roads which an unpractical Road Board has inflicted on us.

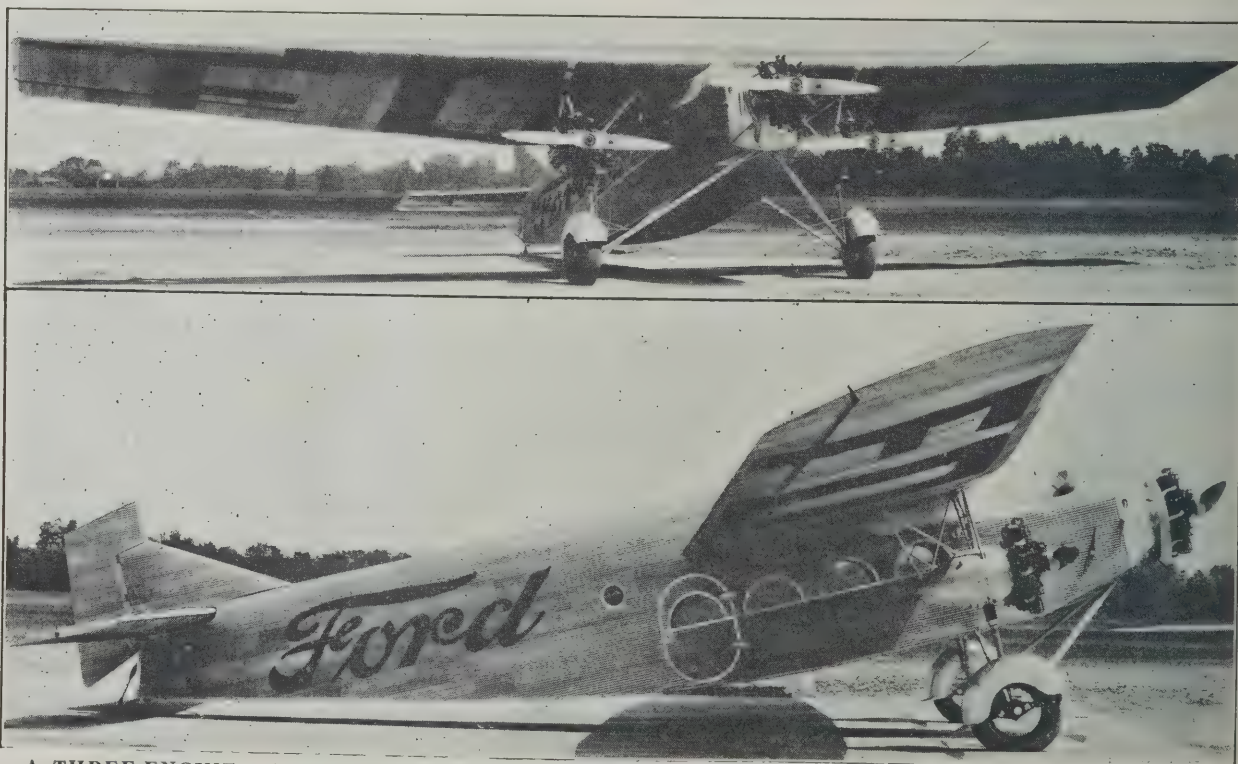
Aerobatics, more vulgarly called stunting, provide an element of comic relief. But an aviator soon gets past the stage when he enjoys looping or rolling or spinning for the fun of doing it. These exercises are of no benefit to the digestion or the muscles as they would be if one did them corporeally on dry land. In an aeroplane by oneself they just become boring, except when testing a new machine to discover its tricks and peculiarities.

Purely as a means of locomotion the aeroplane is excellent. But we have not yet reached the stage at which every town will have an aerodrome and every village a landing ground. So there is not much chance of the members of Light Aeroplane Clubs joining and flying with the main idea of getting about the country quickly and cheaply.

Therefore those to whom is committed the task of popularising the Light Aeroplane Clubs must look for motives other than pure selfish enjoyment of flying, or a desire for rapid locomotion, to induce people to join.

MIXED MOTIVES.

If you dig right down into the queerly mixed motives which cause any human action you will probably find that the two most powerful are vanity and charity, and that quite often the two are combined, incompatible though they may seem. And by vanity one does not mean just playing to an audience, for there is much subtler vanity than that, namely the joy of self-approval.



A THREE-ENGINE AMERICAN CRAFT.—The Ford-Stout commercial monoplane (200 h.p. Wright Whirlwind engines) constructed by the Stout Metal Airplane Co., a division of the Ford Motor Co., of Detroit, Mich. It is of all-metal construction and will be used on the contract air mail routes operated by the Ford Co. between Detroit and Cleveland and Detroit and Chicago.

Another Success for Napiers !

TO discover the best German seaplane a competition has been held in Germany recently.

This competition proved so strenuous both from a reliability and seaworthiness point of view, that, of the seventeen machines entered, only three finished.

A Heinkel seaplane, fitted with the only British NAPIER Lion engine in the competition, won First Prize, being the only machine and engine to complete the severe trials without any repair or penalty mark.

*For all purposes in all climates
install the British-built water-cooled*

NAPIER

The finest aero engine in the World

OTHER NAPIER ACHIEVEMENTS IN 1926

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|--|---------------------------|
| Cairo to Cape Town and back to England by four Royal Air Force Fairey machines | Total engine miles 56,000 |
| Plymouth to Alexandria and back by two twin-engined Royal Air Force Supermarine flying boats | " " " 27,600 |
| Spain to Buenos Aires by twin- engined Dornier flying boat flown by Major Franco | " " " 12,518 |

*All these flights were accom-
plished free of any engine trouble.*

D. NAPIER & SON LTD.
Acton, London, W.3

For example, some of our finest fighting pilots performed their most gallant feats with only themselves and their enemy to behold them. And, like many of the bravest men in history, they were upheld in their fights and got the most supreme pleasure out of them simply by, so to speak, sitting outside themselves and in a curiously impersonal way admiring their own skill and courage.

It is a horrid idea, but it is a basic factor in the psychology of the human animal. Biologically it is probably allied to the fighting between other animals at the mating season, when the males fight purely for the sake of showing off, and not because there is any scarcity of mates.

At the other end of the scale, is that unholy glow of self-righteousness which even the most charitable by nature cannot help feeling when they deliberately put half-a-crown instead of a penny into the plate on the occasion of their biennial visit to church, happily forgetting that they would give as much to an alien waiter for services badly rendered at a meal for two in a fairly decent restaurant—and think nothing of doing so. Presumably the glow comes from watching oneself give something for no immediate visible return—omitting the minute value of the gift as a species of fire-insurance premium. And obviously that is also a form of vanity. So here charity and vanity join forces.

Now, admitting that flying is boring and is not at the moment an ordinarily useful means of locomotion, why should anybody fly? The answer is simply, to compete with other

people, which is a form of vanity, and to give pleasure to other people, which is a form of charity.

The pleasure of competition lies in learning to fly quickly or better than the other pupils, in flying and getting off an landing in better style than the others who have qualified for their Class "A" Certificates, in doing better and longer cross-country flights, and, when the Clubs are more developed, in winning Club and inter-Club races. That is a form of vanity. But it is an entirely praiseworthy manifestation of it, in that it all makes for progress in Aviation and for increasing the air-mindedness of the Nation.

Giving pleasure to other people lies in taking others for flights as passengers, giving pretty exhibitions of flying to entertain non-flying spectators, and in winning inter-Club competitions for the honour of the Club, and in a general way helping to make one's own Club better than the others, all of which increases the Nation's air-mindedness.

When you boil all that down to practical politics it means that the Clubs have got to promote the spirit of competition and sportsmanship and co-operation.

The more flying the Clubs do the more popular flying will become. And the more popular flying becomes the more members will join the Clubs. And the greater the number of new members the more new machines the Clubs will be able to afford. And the more machines the Clubs have the more flying they will be able to do. And so on, like a recurring decimal.—C. G. C.

THE PRINCE OF WALES AND THE BRITISH ASSOCIATION.

In the course of his presidential address at the opening of the annual meeting of the British Association at Oxford on Aug. 4, His Royal Highness the Prince of Wales said:—

"The guidance of scientific research, in its inception, lies with the genius of the individual, its results for the future may lie far beyond the realisation even of the scientific workers themselves. The Oxford Meeting of the Association in 1894 supplies a simple example of this. There was a discussion on flight, in the Section of Mathematics and Physics, opened by Hiram Maxim; and no less a leader in science than Kelvin afterwards described Maxim's own flying machine as a child's perambulator with a sunshade magnified eight times. Yet it was not many years before research in aeronautics had become the care of the State as well as of the individual; and the work carried out before 1914 under (what is now) the Aeronautical Research Committee led on to our wonderful development of aircraft during the war."

A demonstration was given to members of the British Association by the Royal Air Force at Port Meadow, on Aug. 6. The demonstration consisted of an exhibition of different types of machines and instruments, followed by flying.

On Monday, Aug. 9, Mr. H. E. Wimperis read a paper before the Engineering Section on the La Cierva Auto-giro. Having described this class of machine, and drawn particular attention to the neatness and ingenuity of the mechanical design thereof, Mr. Wimperis pointed out that although it was obvious that the rotating wing type was possible, it had been doubtful whether safe descent, engine stopped, could be achieved.

The Auto-giro had dissolved this doubt by showing that the undriven rotating wings properly designed would give enough sustentation to permit safe descent. Careful investigation at Farnborough showed this to be possible.

The Auto-giro, being a practical flying machine, provided a safe and convenient means of investigating the performance of all types of rotating wing machines, and permitted them to work from the known to the unknown, and might lead to the production of a successful helicopter. It was at any rate

clear that there was a field for the rotating wing aircraft but it was yet too early to say what the extent of that field would prove to be.

THE CONTROL OF FRENCH AVIATION.

With the accession to power of the Poincaré Ministry and for reasons of economy the Under-Secretariat of State for Air, together with all other Under-Secretariats, has been suppressed. M. Laurent Eynac, the late Under-Secretary of State for Air, who held this post from January, 1921 to July, 1926 and outlived ten Cabinets, resigned when the Briand Ministry fell, and was not reappointed by the short-lived Herriot Ministry. M. Laurent Eynac's retirement from the post will be a great loss to French Aviation. Owing to his untiring energy, his ready grasp of the situation, his ability to pick capable collaborators, and his great personal charm he succeeded in securing for France a very powerful position in the Aeronautical World. The policy of long service flight, either for record breaking or propaganda purposes, and his active encouragement of the French Industry, has resulted in France regaining most of the World's Records which had been lost to the United States in 1923.

With the suppression of the Under-Secretariat for Air, the technical, manufacturing control, navigation, and meteorological services have now been grouped under a Directorate General of Aeronautics, which is attached to the Ministry of Commerce, after having been temporarily attached to the Ministry of Public Works. Inspector-General Fortant, hitherto Director of the Technical Service, has been appointed head of this new Directorate, with the title of Civil Director of Aeronautics. Colonel de Goys, who was M. Laurent Eynac's *Chef de Cabinet* has been appointed Director of Military Aeronautics, in place of General Dumesnil, who held this post from 1920.

M. Laurent Eynac will probably re-enter the field of journalism, which he left upon becoming Under-Secretary of State for Air, when he also relinquished control of the magazine, *L'Air*, which he founded.



FILLING-UP.—The Bleriot 155 (four 230 h.p. Renault engines) which has recently been taken over by Air Union and used on their London—Paris service, filling up with Pratt's Spirit at Croydon. The machine is named after the late Clement Ader, the great pioneer of French flying.



THE KING'S CUP AIR RACE, 1926.

The winning of the 1926 King's Cup Air Race by Capt. Broad, on a de Havilland "Moth," fitted with a FAIREY-REED Airscrew, adds yet another event to the long list of successes achieved with the Reed Airscrew.

FAIREY-REED ALL-METAL AIRSCREW

Among other recent successes may be mentioned: Commander Byrd's flight to the North Pole; Lieut. Medaet's flight of 11,400 miles from Brussels to the Congo and back; the World's Speed Record of 278 miles per hour, etc., etc.

Sole Manufacturers and Licensees of the Reed patent metal airscrew for the British Empire:

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

MR. COBHAM REACHES AUSTRALIA.

Mr. Alan J. Cobham, who, with Sgt. Ward as engineer, is flying from London to Melbourne and back on a De Havilland 50 (Armstrong-Siddeley Jaguar), flew, on Aug. 3, from Sourabaya to Bima.

On Aug. 4 they flew to Kupang (Timor).

On Aug. 5 they reached Australia at Port Darwin,—37 days after leaving London.

As the late Sir Ross Smith flew from London to Port Darwin in 29 days, 29 may fairly be considered as Bogey for the course, so that Bogey was 8 up on Mr. Cobham. No doubt Mr. Cobham will attempt and accomplish a high-speed flight home, in which he will be well up on Bogey, in which case he will certainly be awarded a plus handicap on his return.

Evidently Mr. Cobham regarded the water at Port Darwin as "Casual Water," as he was permitted to lift his machine out and drop it on the fairway in a line with, but no nearer to, Melbourne. Here he fitted it with a land undercarriage for the journey to Melbourne and back.

On Aug. 8 Mr. Cobham left Port Darwin and flew to Brunette.

One would imagine, from reading the title page of Miss Anita Loos' notorious book, "Gentlemen Prefer Blondes," that this was very ungentlemanly of him.

Later in the day he flew to Camooweal.

Mr. Bruce, the Prime Minister of Australia, has been trying to foist Australian Government petrol onto Mr. Cobham. This seems rather an extraordinary action for him to take at this stage of affairs.

Three petrol companies, the British Petroleum Company, the Burma Oil Co., and the Shell Company, all decided to help the success of the flight by providing and laying down petrol dumps where the route passed their particular areas.

The Shell Company, through their Borneo bases, promised to supply spirit from Bangkok to Melbourne and back, and in actual fact many of the dumps in Australia were laid by aeroplane. Now this sort of thing costs money, and it is natural that if a company goes to the expense of laying dumps it requires a reasonable guarantee that they will be used.

Apparently Mr. Cobham was willing to use this Australian petrol, but before he started those who control the supplies did not see fit to arrange adequate dumps, though they seem anxious enough to help now that he has got to Australia. Consequently, in a letter to Shell-Mex Ltd., written on Apr. 20, Mr. Cobham says "It is clearly understood that I shall fly on Shell spirit between Melbourne and Bangkok on outward and return journeys."

Incidentally, one gathers that the Borneo spirit, supplied by the Shell-Mex-Royal Dutch combine, is used without benzol, being sufficiently rich in aromatics without additions.

So quite where Mr. Bruce and his company come in one fails to see.—G. D.

FORD AEROPLANE DEVELOPMENT.

The definite commitment to Aviation of Henry Ford and all his ramifications is proven by the fact that information about Stout Metal aeroplanes is now circulated to the Press by the Ford Motor Company, Detroit, Mich.

A circular dated July 10, describes "the new Ford three-engine monoplane, just completed by the Stout Metal Airplane Company, a division of the Ford Motor Company," and the statement is made that "except for longer wings and larger cabin space inside, the new plane is similar in every respect to the single-engine Ford planes which have been in operation for more than a year on the Ford Airways between Detroit and Chicago and Cleveland."

Mr. Henry Ford and his son Edsel both went out to the Ford flying field to witness the first test flight of the machine, and a later test flight was witnessed by representatives of the National Air Transport Co. of Chicago, in which Col. Paul Henderson and Mr. C. M. Keys are concerned, and the Colonial Airways Co. of Boston, of which our Mr. Biddlecombe is one of the Managers, and the Western Air Express Co. of Los Angeles, and the Florida Airways Co. of Tampa, on the bay better known in this country in song than in geography.

The new machine has a span of 70 feet. One engine is in the nose of the fuselage and the other two are arranged one on either side below the wing, for which arrangement the claim is reasonably made that greater efficiency is obtained because the airscrews deliver their power without interference from the wings. One is glad to see that Mr. Stout, like Mr. Koolhoven, has realised that wing-interference is a serious objection to the use of tractor airscrews.

The engines are 200 h.p. air-cooled Wright Whirlwinds with metal airscrews. The seating capacity is only for eight passengers and a pilot and a mechanic, which does not seem very much for 600 h.p. But doubtless the machine can carry a greater weight in goods.

THE KEMPSTON BALLOON ACCIDENT.

Five persons, including Mr. E. T. Willows, the pilot, were killed, and one seriously injured by an accident to a captive balloon at a flower show at Kempston, near Bedford, on Tuesday, Aug. 3.

A number of successful ascents carrying passengers had been made by the balloon during the same and the previous day. On its last ascent it carried four passengers in the basket together with Mr. Willows, in a hammock seat in the ropes. It ascended to some 600 ft. successfully, and was in process of being hauled down, when the netting failed, the gas-bag escaped, and the basket and netting fell to the ground. Mr. Willows and a Mr. Harbage were killed at once, Mrs. Harbage and Mrs. Crowsley died shortly afterwards in Bedford Hospital, and Mr. Crowsley died the next day.

A spectator, Mr. Lowe, was seriously injured, but at the time of writing was progressing satisfactorily.

Apparently an abnormally strong gust of wind during the descent was mainly responsible for the accident, by causing the trail rope to fail and catch in a tree, which in turn led to violent swaying of the balloon and caused severe strains on the netting, but pending investigation by the Air Ministry the precise cause of the accident cannot be indicated.

The balloon in question was the property of C. G. Spencer and Sons. According to evidence given at the opening of the inquest on the victims, the net was new last year, of the best obtainable quality, and on examination on the day of the accident was in good condition.

[Nobody appears to have asked how it came about that a spherical balloon, a notoriously dangerous vehicle under the circumstances, was being used as a captive balloon. There should be a law prohibiting the carrying of passengers in any captive balloon other than a kite-balloon, certified as airworthy by the Air Ministry. One did not imagine that anybody would use a spherical balloon in a captive state. Only Mr. Willows' poverty can explain his doing so.—C. G. G.]

That E. T. Willows, the pioneer of British airship construction, should have lost his life while acting as pilot to a captive balloon which formed one of the side-shows at a provincial flower show, is one of those things which could probably not have happened in any country other than Britain.

In other lands it may safely be assumed that a Willows would have found a wider scope for his continued enthusiasm than was in fact available to him here, but much as one must regret his loss it is at least in keeping with his character that he should rather have piloted a captive balloon in these conditions than have remained on the ground.

Willows' work for the lighter-than-air branch of aeronautics was recently fully reviewed in THE AEROPLANE, twenty-one years after he had launched his first airship. As was then shown he had since that time given all his very abundant energy and ability to further the cause of the airship, and had received in return very inadequate reward or recognition.

Yet despite this he was very far indeed from the ordinary conception of the man with a grievance, for a cheerier companion than Willows would be hard to find.

Not that he was indifferent to the many disappointments that had befallen him, or unhurt by the indifference with which his work had been treated officially. But he refused to be soured by his experience, and he retained his belief in and his hope for the airship to the last.

To his widow and orphans one can but very inadequately express sympathy in a loss which in some small part one shares oneself.—W. H. S.

As one who has been closely in touch with Ernest Willows from the earliest days of airship work, one desires to join in the tribute which Captain Sayers has offered to his memory.

Ernest Willows was a young man of unusual enterprise and ability, as is shown by the fact that he built his first airship before he was twenty years of age. Like so many pioneers, he had ideas which were too far in advance of his time. Yet they were not so far in advance as to be unusable. The result was that other people were able to profit by them while he was alive to see them do so.

The real cause of his failure to do as much as his mental ability entitled him to do was that he had no true engineering training. If, instead of building airships by pure rule of thumb, between the ages of 18 and 22, he had spent those years in a first-class engineering shop, he might to-day have been among our leading aeronautical engineers. As it is he is only the victim of a useless type of aircraft. And the type of airship to which he devoted his life's work has itself proved to be of little worth, though it fulfilled some useful purpose during the war 1914-18.

Nevertheless, in his youthful days, Ernest Willows did good service to the progress of aerial navigation. And for that he is well worthy of his place among the great pioneers of British Aeronautics.—C. G. G.



AEROPLANES AND AERO ENGINES.



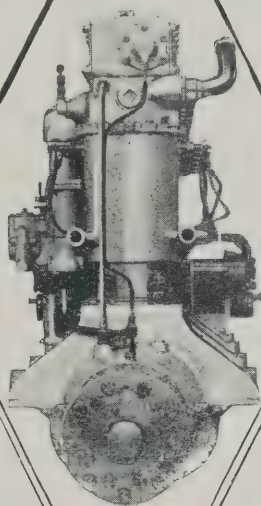
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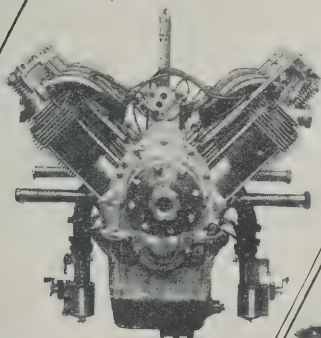
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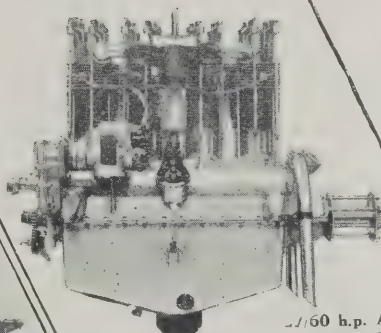
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THE ROYAL AIR FORCE.

The London Gazette.

Aug. 3

GENERAL DUTIES BRANCH.—The following were granted S.S. comms. in the ranks stated, with effect from, and with seniority of, the dates indicated:—FLG. OFF.—H. E. Power (July 24). PLT. OFFS. ON PROBATION.—J. W. O. Fuller (July 27); W. G. Cheshire (July 28).

The following PLT. OFFS. are promoted to the rank of FLG. OFFS.:—F. C. Rowland (May 15); H. C. Macphail (May 22); S. H. V. Harris (June 17); R. J. A. Ford (June 17).

FLT. LT. G. I. Thomson, D.F.C., is transferred to the Reserve, Class A (Aug. 4). FLG. OFF. D. E. Godwin relinquishes his S.S. comm. on account of ill-health (Aug. 4). FL. OFF. A. P. Hannay, M.C. (Lt., Cameron Highlanders), relinquishes his temp. comm. on return to Army duty (July 28).

ACCOUNTANT BRANCH.—FLG. OFF. E. K. Greenhow, M.C., is dismissed the Service by sentence of Field General Court Martial (June 2).

MEDICAL BRANCH.—J. O. Priestley, D.M.R.E., is granted a S.S. comm. as a FLG. OFF. for three years on the active list, with effect from and with seniority of July 13.

The following FLG. OFFS. are promoted to the rank of FLT. Lts. on promotion to the rank of temporary Capt., General List, Army:—A. Rhodes (Mar. 14); H. R. Peek (Mar. 20); N. F. Smith (Mar. 28). FLT. LT. A. W. Comber relinquishes his temp. comm. on ceasing to be employed (July 24).

RESERVE OF AIR FORCE OFFICERS.—H. Bradley is granted a comm. in Class AA., General Duties Branch, as a PLT. OFF. on probation (June 7). (Substituted for notification in the Gazette of June 22.)

The following PLT. OFFS. are promoted to the rank of FLG. OFF.:—E. B. Fielden, H. Rhodes, L. S. Webb (Apr. 13); G. P. Macdonald (May 26); A. Gillespie (June 9); T. E. Greenough (June 16).

FLG. OFF. G. S. Fenwick is transferred from Class A to Class C (June 19).

The following FLG. OFFS. relinquish their comms. on completion of service (July 31):—F. E. Hills, W. H. Oatley.

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be PLT. OFFS.:—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—G. W. H. Wallcousins (Aug. 3). No. 603 CITY OF EDINBURGH (BOMBING) SQUADRON.—L. J. Blake (July 24).

Appointments.

Week ending Aug. 9.

GENERAL DUTIES BRANCH.—Wing Commander E. R. Manning, D.S.O., M.C., to R.A.F. Depot, Uxbridge, pending disposal, 3/8.

Squadron Leaders W. J. Y. Guilfoyle, O.B.E., M.C., to H.O., Wessex Bombing Area, Andover, 27/7. G. F. Breese, D.S.C., to Inspector of Recruiting, 3/8. C. G. Burge, O.B.E., to Air Ministry, 3/8. C. F. Gordon, O.B.E., M.C., D.F.C., to No. 1 F.T.S., Netheravon, 19/8.

Flight Lieutenant H. V. Drew, A.F.C., to No. 100 Sqdn., Spittlegate, 5/8.

Flying Officers W. E. Purdin, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 9/7. H. B. Barrett, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 22/7. O. W. Lee, to R.A.F. Depot, Uxbridge, 28/7. H. L. R. Gough, to R.A.F. Depot, Uxbridge, 27/7. H. R. F. Baxter, to R.A.F. M.T. Depot, Shrewsbury, 11/8. H. F. Luxmoore, to No. 56 Sqdn., Biggin Hill, 19/7. J. H. Sender, to No. 25 Sqdn., Hawkinge, 26/7. J. H. Caulfield, to remain at No. 111 Sqdn., Duxford, instead of to No. 5 F.T.S., as previously notified.

Pilot Officer J. W. O. Fuller, to No. 2 F.T.S., Digby, on appointment to a S.S. Comm., 27/7.

MEDICAL BRANCH.—Squadron Leader T. J. Thomas, M.B., to R.A.F. Hospital, Cranwell, 30/7.

STORES BRANCH.—Flight Lieutenants E. E. Porter, M.B.E., D.C.M., L. A. Lavender, and E. W. Lawrence, to R.A.F. Depot, Uxbridge, 9/8.

Flying Officers A. M. Reidy, to R.A.F. Depot, Uxbridge, 9/8. H. D. Giblett, to No. 12 Sqdn., Andover, 27/7.

ACCOUNTANT BRANCH.—Squadron Leader P. J. Wiseman, to Home Aircraft Depot, Henlow, 10/8.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Multan, India, to a Bristol Fighter of No. 31 Squadron, Ambala, on Aug. 1, FLG. OFF. Jack Courtney Marcy, the pilot of the aircraft, and No. 62441 L-AC. Percy William Edward Crunden, were seriously injured.

L-AC. Crunden died of his injuries later in the day.

The Air Ministry regrets to announce that No. 157679 L-AC. Robert Lloyd Carr died in Chester Royal Infirmary on Aug. 1, as the result of injuries sustained on July 13, in an accident at Sealand Garden City to a Snipe of No. 5 F.T.S., Sealand. At the time of the accident, L-AC. Carr was the pilot and sole occupant of the aircraft.

Another Parachute Success.

On July 29, while Spts. W. J. Frost and H. C. Steanes, of No. 12 Bombing Sqdn., were doing flying practice at the Andover aerodrome, their machines collided at a height of about 1,000 ft. Each man swerved to avoid the other, but the wing-tip of Frost's machine touched the tail of that piloted by Steanes.

Finding it impossible to right their machines both pilots descended by parachute. Steanes landed in the Weyhill Station Yard unhurt, and Frost landed near by, receiving minor injuries. Both aeroplanes, which were Fairey Foxes, were wrecked.

R.A.F. Trooping.

S.S. *Assaye* will sail from Southampton on Sept. 21 as a Royal Air Force troopship. Her destination is the Persian Gulf.

Night Flying at Biggin Hill.

The Air Ministry state that R.A.F. aircraft will be flying in the neighbourhood of Biggin Hill aerodrome every evening during the next two months. As these aircraft will not exhibit their navigation lights after attaining a height of 4,000 ft., civil aircraft flying in this district after sunset should keep below this altitude.

The Fleet Air Arm.

The Times of Aug. 2 says:—

Attachment to the Fleet Air Arm, states a new Fleet Order, do not render naval officers ineligible for selection later on to qualify as specialists. Naval officers who have completed period "A" in the Fleet Air Arm may volunteer, and are eligible for consideration for training as specialist officers. This is the first period of air service lasting four years, including a period of training.

Vacancies For Apprentice Clerks.

The Air Ministry announces:—

Sixty vacancies exist in the Royal Air Force for well-educated boys, between the ages of 15½ and 17, to enter as Apprentice Clerk. Approximately 40 of the posts will be filled by means of an open competition which will be held by the Civil Service Commissioners. October at various centres and the remaining 20 by direct entry. Boys who have obtained an approved school certificate. Successful candidates will be required to complete a period of 12 years' regular Air Force service after reaching the age of 18, in addition to the training period. At the age of 30 they may return to civil life or may be allowed to re-engage to complete time for pension.

Detailed information regarding the apprentice clerk scheme can be obtained from the Secretary, Air Ministry, Kingsway, London W.C.2.

Boys entered under this scheme undergo a two years' course training in clerical duties, typewriting, shorthand, book-keeping and practical office routine, during which time their general education is continued under qualified schoolmasters.

The apprentice clerks are paid 7s. per week for the first year and 10s. 6d. per week afterwards until they have both attained the age of 18 and have been posted for duty after passing their final examination. The subsequent commencing rates of pay varying from 2s. to 31s. 6d. per week depend upon the degree of success achieved in this examination. In addition they receive free board and lodging.

An opportunity will be given to all Apprentice Clerks to volunteer for training as airman pilots, of whom a few are periodically selected for commissioned rank.

Aircraft Apprentices.

The Air Ministry announces:—

Five hundred aircraft apprentices, between the ages of 15 and 17, are required by the Royal Air Force for entry into the School of Technical Training, Halton, Bucks, and Flowerdown, near Winchester. They will be enlisted as the result of an Open Competition and of a Limited Competition held by the Civil Service Commissioners and the Air Ministry respectively.

Successful candidates will be required to complete a period of (twelve) years' regular Air Force service from the age of 18, in addition to the training period. At the age of 30 they may return to civil life or may be allowed to re-engage to complete time for pension.

Full information regarding the aircraft apprentice scheme, which offers a good opportunity to well-educated boys of obtaining a three years' apprentice course of a high standard and of following an interesting technical career, can be obtained on application to the Secretary, Air Ministry, Kingsway, London, W.C.2.

Approximately 2,500 aircraft apprentices have already completed their training at the technical schools of the Air Force, and the annual output is now in the neighbourhood of 1,000 fully trained aircraftsmen.

The Open Competition, for which a fee of 5s. is charged, is, its name indicates, open generally to boys within the age limits, and forward completed application forms to the Secretary, Civil Service Commission, Burlington Gardens, London, W.1, not later than Sept. 2.

The sons of officers, warrant officers, and senior n.c.o.s of the Air Force Services who wish to enter as aircraft apprentices receive special consideration. In their case applications for nomination should be made to the Secretary, Air Ministry, Kingsway, London, W.C.2, not later than Aug. 12.

All candidates for the Limited Competition must receive a nomination before they can attend this examination. These nominations must be received by the Air Ministry from the nominating authority not later than Oct. 5. If they are still at school, candidates should apply to their headmaster with a view to obtaining a nomination from the local Education Authorities; if they have left school, application can be made to the Advisory Committee for Juvenile Employment in their area. There is no fee for this examination which is carried out at local centres in each area where boys are nominated.

The principal trades open to boys are carpenter-rigger, aero-engine fitter and wireless operator mechanic. The apprentices are given a thorough training in their trade by highly qualified technical instructors and their general education is also carried on simultaneously by civilian schoolmasters.

During the training period the rate of pay is 7s. a week for the first two years and 10s. 6d. a week thereafter until the apprentice has both attained the age of 18 and been posted to a unit on completion of his training, when he is posted to a unit for duty as an aircraftman the rate of pay varies from 3s. 3d. to 5s. 6d. per day according to the success attained in the passing out examination. They also receive free board and lodging.

THE FLIGHT TO AUSTRALIA

MR. ALAN COBHAM, who reached Port Darwin, Northern Australia, on Thursday, August 5th, a distance of nearly 11,000 miles, is using throughout to lubricate the Armstrong-Siddeley "Jaguar" engine of his D.H.50J a standard grade of

WAKEFIELD CASTROL MOTOR OIL

The irreproachable quality of this world-famous lubricant is proved by public performance day by day, in every field in which motors are in use.

The few pence more per gallon for Wakefield CASTROL will be returned to you a thousand-fold in the increased efficiency of your engines, in reduction of wear and carbonisation, and in freedom from all the irritations attending the use of inferior lubricants.

All over the world, when only the best will stand the test, all use—



—the Product of an all-British Firm.

C. C. WAKEFIELD & CO., LTD., Wakefield House, Cheapside, E.C.2.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

In addition a few apprentices of special promise proceed to the Royal Air Force Cadet College for training as Commissioned officers. For the remainder opportunities arise later to volunteer to qualify in flying and become serjeant pilots. From amongst serjeant pilots, a few are periodically selected for commissioned rank.

Economy in the R.A.F.

The Second Report from the Select Committee on Estimates (Co-ordination of Common Services) was printed by order of the House of Commons on July 28. The Report contains a number of recommendations for the greater co-ordination of common services between the Fighting Departments.

The summary of the principal recommendations, with special reference to the R.A.F., are as follows:—

- (1) That the staff of the Air Force Stationery Store should be reduced.
- (2) That the question of the amalgamation of the two Air Force Hospitals at Baghdad should receive early consideration.
- (11) That the Works Estimates of the Air Ministry should be more precise than they are at present.
- (12) That the Estimate of the Air Ministry for the staff of the new hospital at Halton should be reduced.
- (13) That the establishment for recruiting in the Air Force should be reduced.

Air Appropriations, 1924-25.

The Air Appropriation Account for 1924-25 showed a net surplus of £261,178 12s. 4d. This total is made up of surpluses of estimated over actual gross expenditure in every Vote except Pay, etc., Technical and Warlike Stores, Meteorological Services, and non-effective services. On the other hand the Pay Vote showed an excess of £143,485 8s. over the estimated gross expenditure. The Technical and Warlike Stores Vote also showed an excess of £389,829 18s. 3d. over the estimate. And £3,895 19s. 9d. was written off as irrecoverable.

In the House of Commons on July 26, the Secretary of State for Air proposed "that the application of such sums be sanctioned."

Capt. Wedgwood Benn said that he would like an explanation of the reason for this excess of expenditure on Technical and Warlike Stores. He did not think the Air Ministry ought to spend money on one head which had been allotted for another purpose. He started to discuss the French expansion programme, when Sir Samuel Hoare pointed out that the Vote in question concerned 1924-25 and therefore the happenings in other countries were not relevant.

Sir Samuel Hoare went on to explain that 1924-25 was the year immediately following the announcement of the Home Defence programme and said that it was with the general assent of all parties in the House that the Air Ministry progressed as far as it could with that programme and pressed on with orders for new aircraft and engines. It was always difficult to get engines and aircraft delivered, but in this case the deliveries were quicker than usual.

Capt. Garro-Jones said that what baffled him was how it was that it was found necessary to spend so very much more money on the fighting part and so much less on the civil part. He also thought that the amount written off as irrecoverable ought not to pass without some sort of explanation.

Sir Samuel Hoare said that the Civil Aviation surplus was due to the delay in the improvement of Croydon Aerodrome owing to the necessity for the introduction of a Bill.

With reference to the Meteorological and other Miscellaneous Items, large claims for compensation at home and abroad had been repudiated or reduced. There had also been a smaller recovery of money from the Middle East Vote than had been expected.

With regard to the small sum of £3,900 written off as irrecoverable, there was always a small sum of that kind in the Service Votes. No estimate was made for any irrecoverable sum.

The Resolution was reported on the following day and agreed to.

Bettering the Doctoring.

At the Meeting of the British Medical Association at Nottingham the fact was made known on July 21 that a satisfactory agreement had been reached between the B.M.A. and the Services.

At the Association's last meeting at Bath the B.M.A. decided that candidates for the Medical Services should be cautioned against the conditions existing in the Fighting Services. Since then the subject has been considered by a Departmental Committee, and in consequence an agreement has been reached to the effect that if a doctor has held a house appointment at a hospital and then joins one of the Fighting Services he shall be entitled to include his service in the hospital as counting towards his seniority in the Service.

Apparently the result of this will be that instead of appointing inexperienced doctors and expecting them to work up their Service seniority and medical experience simul-

taneously, the Fighting Services will have some hope of inducing doctors with considerable civilian experience to join the Medical Services, as they will then start with an amount of seniority commensurate with their age and experience.

The old arrangement certainly was unreasonable, for one could scarcely expect a doctor with perhaps seven or eight years' experience, which is about the least a man ought to have before he can be trusted to take serious responsibility to join the Air Force with the rank of a pilot officer.

Promotion Examinations.

The following publication has been received from the Air Ministry:—

Air Publication 1215, 1st Edition, May 1925. *Report on the Royal Air Force Promotion Examinations.*

The publication embodies the examination papers set and the remarks of the examiners on the result, and is issued for the information of those officers who sat for the examination and as a guide to future candidates.

It is published by H.M. Stationery Office, Adastral House, Kingsway, W.C.2, price 6d.

Ex-Aircraft Apprentices and the S.B.A.C.

The following correspondence between the Old Haltonians Society and the Society of British Aircraft Constructors Ltd. is taken from *The Halton Magazine* (Summer Number, 1926) and is of considerable interest:—

Society of British Aircraft Constructors Ltd., 1, Albermarle Street, London, W.1. June 18, 1926.

To Air Vice-Marshal C. L. Lambe, C.B., C.M.G., Area Headquarters, Royal Air Force, Halton, Bucks.

Dear Sir,—I beg to acknowledge receipt of your letter of the 15th inst., with regard to the employment in civil life of Halton Students who are discharged on medical grounds.

Your letter has been considered by our Committee, and they wish me to inform you that the Society will be very pleased to keep a register of cases similar to the one referred to in your letter and to provide the Industry from time to time with information as to Apprentices who are in need of civil employment.

Will you please let me have the information necessary to enable me to commence the proposed register?—Your faithfully, (Signed) CHARLES V. ALLEN, Secretary.

Old Haltonians' Association, School Buildings, Halton Camp, Bucks. June 21, 1926.

To the Secretary, Society of British Aircraft Constructors Ltd., 1, Albermarle Street, London, W.1.

Sir,—I am instructed by Air Vice-Marshal C. L. Lambe, C.B., C.M.G., to acknowledge the receipt of your letter (155/1/A) of 18/6/26. He wishes me to express his thanks for your very kind acceptance of his proposition.

He has now handed the matter over to me, as Secretary of the Old Haltonians' Association, and names will be sent to you at once.

In sending you names, we propose also to forward you reports on the boys, indicating their standard in Shops and School. I am, Sir, Your obedient servant, (Signed) E. C. GLASSON, Hon. Secretary, Old Haltonians' Association.

All employers of labour in the Aircraft Industry who are looking for employees whose loyalty, intelligence, energy and high technical ability are beyond question, will do well to consult this register of former Apprentices in the R.A.F. who are in need of civil employment.

R.A.F. AFFAIRS IN PARLIAMENT.

R.A.F. PRISONERS OF WAR.

In the House of Commons on July 29, SIR C. COBB asked the SECRETARY OF STATE FOR FOREIGN AFFAIRS whether he is aware that Fig. Off. F. M. Denny and AC. Hirst had been prisoners of Sheikh Mahmud, in Persian territory, for over six months; and what steps were being taken by the Foreign Office for the release of these British prisoners?

MR. ORMSBY-GORE said that he had been asked to reply. The two airmen were captured by Sheikh Mahmud on June 14, and were believed to be now in Persian territory. Every effort had been made, and was still being made, by His Majesty's High Commissioner at Baghdad and by His Majesty's Chargé d'Affaires at Teheran to secure their early release.

The Persian Government had expressed their determination to assist His Majesty's Government in every possible manner, and they were taking active steps with that object.

THE R.A.F. DISPLAY.

In the House of Commons on July 21, COLONEL DAY asked the SECRETARY OF STATE FOR AIR the number of motor-cars that paid for admission to the R.A.F. Display on July 3. Sir Samuel Hoare replied that approximately 3,820 cars and chars-à-bancs paid for admission and 390 received free passes.

In reply to SIR HARRY BRITAIN, SIR SAMUEL HOARE said that the actual admissions to Hendon Aerodrome on the day of the R.A.F. Display numbered approximately 72,000, and that the approximate sum raised for the R.A.F. Memorial Fund was £6,500. Final figures would be available later.

FATAL ACCIDENTS.

In the House of Commons on Aug. 4, in a written reply to a question by COL. ENGLAND, the SECRETARY OF STATE FOR AIR stated that the total number of fatalities to members of the R.A.F. from Jan. 1 to July 27, 1926, was 53. Of these 44 were due to flying accidents. The table describing the causes of the accidents attributes 19 of them to error of judgment, 2 to weather, 1 to defective aircraft, and 3 to indeterminate causes. Of the 14 non-flying accidents, 12 were motor-car and cycle accidents, 1 a bomb accident, and 1 an accident caused by an airscrew.



MOTHS

AT THE
YORKSHIRE AIR
PAGEANT.

¶ Of the eighteen aeroplanes participating in the Air Pageant organised by the Yorkshire Aeroplane Club, at Sherburn-in-Elmet, on July 24th, TWELVE were de Havilland MOTHS.

¶ They were flown by members of the Yorkshire, London, Lancashire and Newcastle Clubs and by several private owners.

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AIRCRAFT CO., LTD.**
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Telephone: Colindale 6160.

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FOUR CYLINDER AIR-COOLED
ENGINE WITH DUAL IGNITION.

DUAL CONTROL.

FOLDING WINGS.

HAND STARTER IN COCKPIT.

RUBBER IN COMPRESSION
UNDERCARRIAGE.

LUGGAGE COMPARTMENT.

RANGE.....3½ HOURS.

PETROL CONSUMPTION...20 M.P.G.

SPEED RANGE.....40-90 M.P.H.

AEROBATIC CERTIFICATE
OF AIRWORTHINESS.

THE RACE FOR
THE
KING'S CUP
WON BY
Capt. H. S. BROAD, A.F.C.
ON A
DE HAVILLAND
MOTH
AT A SPEED OF
90.4 M.P.H.

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FLYING HOURS.

In the House of Commons on Aug. 3, in reply to a question by LIEUT.-CDR. KENWORTHY, the SECRETARY OF STATE FOR AIR said that it would not be in the public interest to disclose the actual number of hours flown in the R.A.F. But he could say that the number of hours flown in 1925 by all Units was materially larger than the corresponding figure for 1924, whilst those flown by Home Defence Units showed a still greater increase.

The Halton Magazine.

The Summer (1926) Number of *The Halton Magazine* contains, among other extremely interesting articles, the late Mr. A. B. Elliott's account of the flight from London to Cape Town and back. Those readers of *THE AEROPLANE* who enjoyed Mr. Elliott's "cameos" published during the course of the expedition will be very interested to read his own story of the whole flight. He explains that, except for a fortnight's course of instruction at the Armstrong-Siddeley Works at Coventry, he had had no previous experience of the 385 Jaguar engine, a fact which makes Mr. Elliott's highly-successful accomplishment of his part of the expedition all the more remarkable.

The article is delightful, and is illustrated by twelve photographs and a very good map.

The rest of *The Halton Magazine* is quite up to its usual standard of interest and entertainment.—C. M. MCA.

"Contact."

In a description of the recent Territorial Manœuvres near Weymouth, *The Daily Chronicle* states:—

A contact aeroplane used a parachute which descended and picked up a bag, the bag then being drawn up to the aeroplane again.

This was done under heavy anti-aircraft fire.

It is to be hoped that a number of these helpful and intellectual parachutes will be taken on the strength of every "contact" Squadron.

India and Empire Air Policy.

In an article on India's place in the Empire's Air Policy, in the July issue of *The Journal of the United Service Institution of India*, Sq. Ldr. E. J. Hodsoll, R.A.F., who is on the Headquarters Air Staff, India, states that the swift advance of flying made during the War 1914-18, more or less passed India by owing to the distance of India from the main theatres of war. He points out that in spite of the fact that aeroplanes were used in the third Afghan War, and to a certain extent on the frontier, the combined effects of the need for urgent financial economy and the lack of an appreciation of aircraft as an economical factor in the preservation of peace on the frontier have led to such drastic curtailment of Air Force needs that for a time it almost ceased to exist as a fighting unit. Sq. Ldr. Hodsoll claims that reaction has occurred and that India now possesses a small but highly-efficient Air Force. He omits to record however how much more efficient the R.A.F. in India could be if the parsimony of the Government of India did not prevent it being equipped with machines of a later date than the 1917 (and thereabouts) types at present in use. The North-West Frontier of India is at present one of the few parts of the globe where active service conditions exist, and yet the Squadrons stationed there are the last to be supplied with up-to-date equipment.

Dealing with the present world situation, Sq. Ldr. Hodsoll states: "Aircraft provide at once an economical and possibly decisive weapon, capable of reaching in one bound the objects for which an Army or a Navy have to engage in bloody battle." Claiming that the days of battleships are numbered, he adds that the world tendency in armaments to-day is towards speed and mobility combined with efficient striking power.

He points out that while the Nations of Europe are developing their air forces in a way which is bound to lead to international competition, the East has also been developing military and civil aviation under the guidance of one or another of the European competitors. Soviet Russia is used as an illustration of this point, a country unhampered by the artificial restrictions of disarmament conferences.

Germany is another country which, although, as the author of the article says, "hedged in by restrictions . . . has interested herself in building up a predominating influence in foreign countries in all parts of the world, and with a very great measure of success."

Dealing with international air restrictions, Sq. Ldr. Hodsoll makes the extraordinary claim that International air routes are governed by political and military factors, while sea routes are governed by Nature. Surely in time of war air routes will be governed—more or less—by A.A. guns and military aircraft, and sea routes by submarines and other weapons of offence. One cannot agree with his somewhat sweeping assertion that "England can be cut off aerially from all her possessions, except, perhaps, Canada and the West Indies." Later on in the article he again states that, "in a moment England may be aerially severed from the rest of the Empire. Military reinforcements can be sent by sea always, etc." From this peculiar argument he deduces

that England must be capable of defending herself aerially without reinforcement from outside, since any reinforcements would have to come by sea and would inevitably arrive much too late. He adds that we shall need a series of strong air bases to safeguard our Empire air communications, and suggests a series of zones, to contain air garrisons, for this purpose. He suggests Egypt and the Mediterranean as the first zone, India as the second, Australia the third, and Hong Kong the fourth. This scheme does not appear to differ to any great extent from the present system of occupation by naval and military forces of various stations for the protection of British interests abroad. Sq. Ldr. Hodsoll is merely substituting R.A.F. Units for naval stations and military garrisons. He would like to see these air bases very carefully sited for their economical advantages in times of peace, and points out that peace value and training would be problematical, if, for instance, a number of squadrons were packed into a small island. He does not use Iraq as an illustration to this argument. It is probably too obvious a one for his readers, combining, as it does, a first-class training ground for all air force exercises, with its unique position for the defence of a large section of the Egypt-India air route.

Sq. Ldr. Hodsoll prefers to think of Egypt and India as being suitable for air garrisons, and classes Iraq with Palestine and Singapore, as "storm-centres," to be reinforced when necessary. He does not take into account the probability that India may be too fully occupied in her own defence to worry about communication lines from the West, and in just the same way Egypt might find her hands full.

That India is a vital link in International Airways from Europe to the East, is beyond all question, but that to consider her as only a link instead of a great part of the chain seems to be somewhat underrating her importance.

Sq. Ldr. Hodsoll concludes his very interesting article with some comments on the Russian menace, and offers his opinion that the time is not very far distant when it will be necessary to maintain a reserve of squadrons in India to meet possible eventualities in the East. He adds:—"India will become to the Air Force what Colombo is to the Navy in the East Indies station."

There is no possible doubt in the minds of the faithful that the Royal Air Force, given adequate equipment, will be as effective in their own sphere in the future as the military defence forces of India have been in the past.—C. M. MCA.

NOTES FROM AUSTRALIA.

The Royal Australian Air Force have adopted the Irvine parachute as standard equipment, and practically all the officers and a number of airmen of No. 3 (Army Co-operation) Squadron, Richmond, N.S.W., have made several jumps.

No. 101 (Fleet Co-operation) Flight stationed at Point Cook, Victoria, have now received their equipment of Supermarine Seagull amphibian flying-boats (450 h.p. Napier Lion engines), and with them have been conducting bombing experiments with some obsolete submarines. From a height of 3,000 feet, six out of eight bombs were dropped within 20 feet of one submarine.

Sq. Ldr. L. J. Wackett, D.F.C., A.F.C., officer in charge of the Experimental Section, R.A.A.F., Randwick, is engaged on the design of two new training biplanes for the R.A.A.F. One of these is to be fitted with either the Bristol Lucifer or the Siddeley Lynx engine, and the other will have an 80 h.p. engine designed by Sq. Ldr. Wackett.

The first R.A.A.F. Cadet Course for candidates for commissions in the Citizen Air Force ended on Mar. 30, at No. 1 F.T.S., Point Cook, resulting in 21 cadets out of 30 passing out successfully as Pilot Officers.

The first two de Havilland Moths ordered in connection with the Light Aeroplane Club scheme of the Australian Air Board, have been delivered to the New South Wales section of the Australian Aero Club for the use of the Sydney Club. About 80 applications for membership had been received up to June, several of which came from men in foremost positions in Sydney.

The two Moths for the Victorian branch were consigned by a later boat from England, but these should have been delivered by now.

Mr. B. G. Nicholl, a consulting engineer, of 414, Flinders Lane, Melbourne, has been made Australian agent for the Pander Company, of The Hague, Holland. It is stated that six Pander aircraft, one single-seat monoplane (35 h.p. Anzani engine) and five two-seat biplanes (50 h.p. Anzani engines) have been shipped for delivery in Melbourne.

A message from Melbourne states that the Federal Government is considering a scheme to run an air line between Canberra, the new Federal capital, and Melbourne, with the possibility of extending the line to further towns, so that Members of Parliament can visit the principal constituencies during the week-end.

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Naval, and Military Purposes.

The machine illustrated is the Vickers "VIMY" Ambulance, as supplied to the Royal Air Force for operation in the East, where this type has proved of great value for the rapid evacuation of sick and wounded.

Fitted with twin 450 H.P. Napier "Lion" engines the "VIMY" has accommodation for a crew of 2 and Doctor, Nurse and 4 stretcher cases or 8 "sitting up" cases.

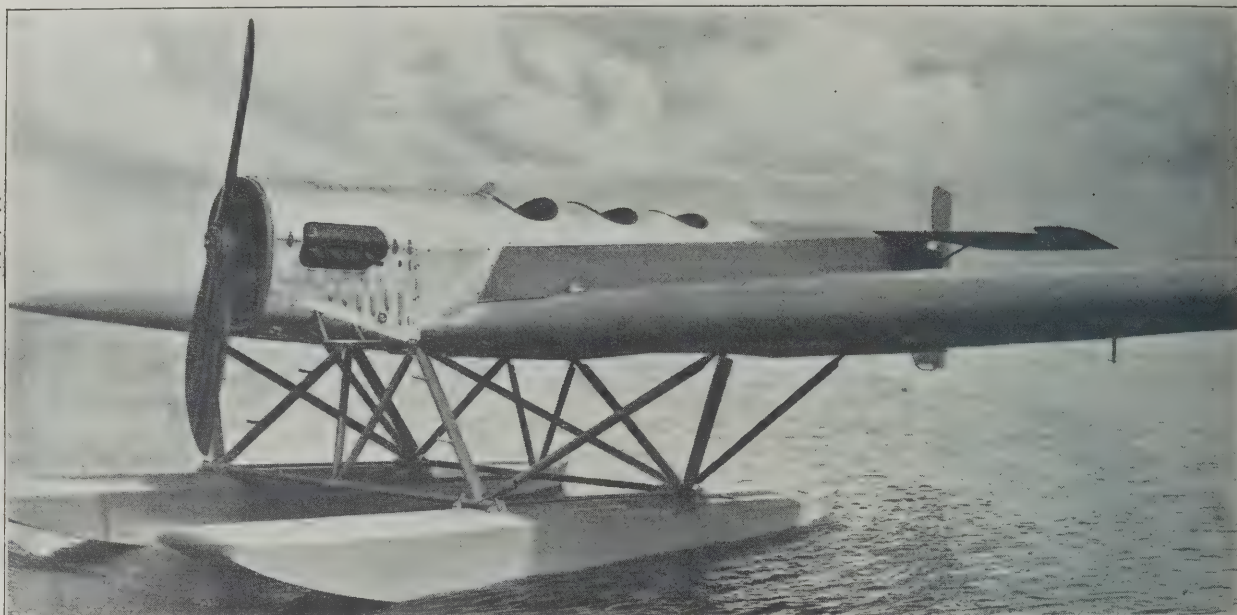
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THE GERMAN SEAPLANE COMPETITION.



THE WINNER AT WARNEMÜNDE.—The Heinkel H.E.5 monoplane (450 h.p. Napier Lion engine), which won the German Seaplane Competition. According to a telegram received by D. Napier and Son Ltd. from the Heinkel Company, the Heinkel-Napier was the only machine to go through the strenuous contest without repair or penalisation.

No details other than those recorded in last week's THE AEROPLANE are yet to hand as to the final results of the German seaplane contest. The method whereby prizes are to be adjudicated is distinctly complex, and although the survival of only three competitors will doubtless simplify the process, the figures for performance which are already available are probably of more general interest than the official awards will be.

The official marking is based on a number of factors, including the ratio of disposable to empty weight, the speed of climb between 1,000 and 2,000 metres, the mean speed—which is the average of the maximum speed measured over a quadrangular course, and the average overall cruising speed on the 4,000 odd kilometres of coastal flights which had to be made, the radius of action—determined by the fuel capacity and the measured consumption over 250 km., and the getting-off speed, which is measured photographically. Finally the seaworthiness test, consisting of three takes-off and three

alightings, and a series of taxiing tests on a rough sea must be survived to qualify.

That the seaworthiness test was a severe one is shown by the small number of survivors.

The coastal reliability journeys were:—July 24, Warnemünde to Emden via Norderney and back to Norderney (946 km.); July 25, Norderney to Warnemünde by an involved route (984 km.); July 26, Warnemünde to Pillau via Memel (1,164 km.); July 27, Pillau to Warnemünde via Neustadt (1,165 km.).

Of the original 18 entries, five entered failed to appear. No. 1 (L.F.G. V.59) was absent without explanation. No. 4 (Caspar C.29) was burnt at the maker's works, No. 13 (Gebrecht three-engined monoplane) was apparently not built. The two Dornier Do.E.s were withdrawn. The Udet, No. 18, did not arrive in time for preliminary tests.

No. 6 (Rohrbach Ro.VII) broke an airscrew during performance tests, and the fragments damaged the hull. It, and

DATA AS TO PERFORMANCES DURING THE COMPETITION.

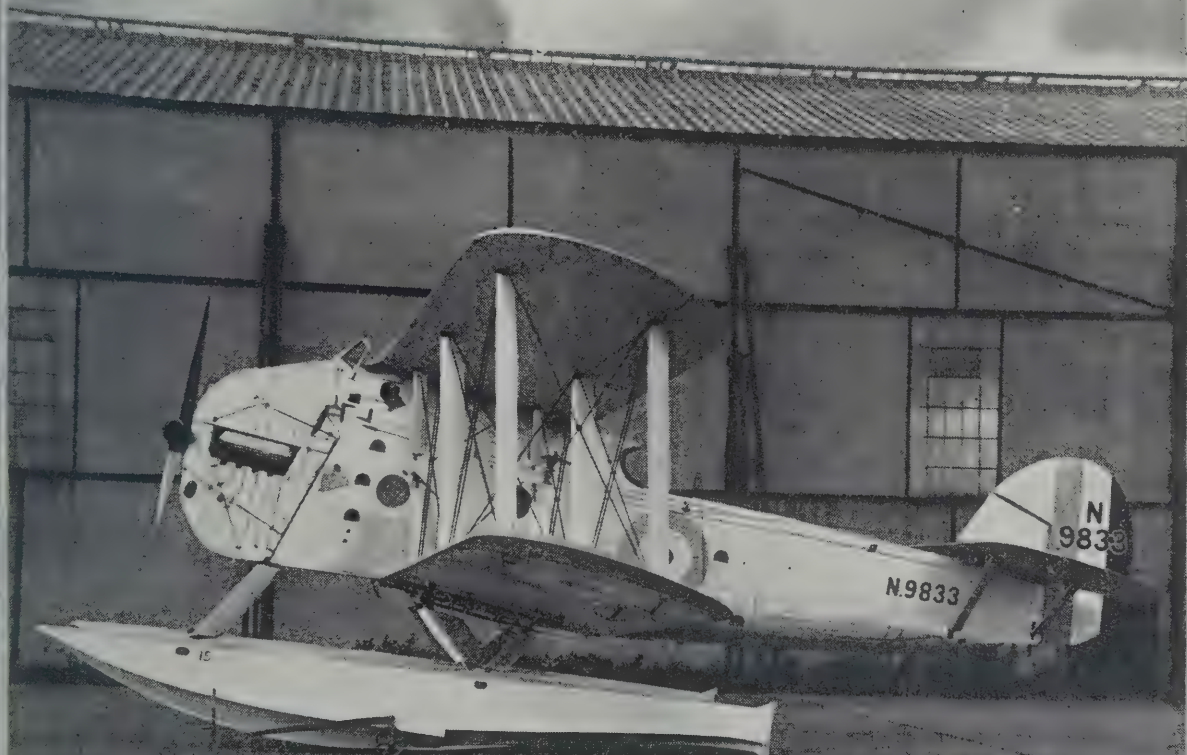
| No. | Machine. | Engine. | WEIGHTS | | | | Climb 1000 to 2000 m. (3280 to 6560 ft.) | Max. Speed. | Get off Speed. | Remarks. |
|-----|------------------|---------------------------|-------------------------|-------------------------|------------------------|--------------------------------------|--|----------------------------|---------------------------|---|
| | | | Empty. | Loaded. | Fuel and Oil. | Ratio Load to Empty Weight. | | | | |
| 2 | L.F.G. V.60 | B.M.W. IV 230 h.p. | 1353 kg. (2900 lbs.) | 2000 kg. (4408 lbs.) | 275 kg. (607 lbs.) | .478 | Mins. 9.05 | 147 k.p.h. (91 m.p.h.) | 74 k.p.h. (46 m.p.h.) | Did not complete reliability test |
| 3 | L.F.G. V.61 | Jupiter 420 h.p. | 1456 kg. (3210 lbs.) | 2400 kg. (5300 lbs.) | 358 kg. (788 lbs.) | .561 | 6.6 | 178 k.p.h. (110 m.p.h.) | 84 k.p.h. (52 m.p.h.) | Damaged alighting; did not complete |
| 5 | Rohrbach Ro. VII | 2 B.M.W. IV 230 h.p. each | 2026 kg. (4460 lbs.) | 3246 kg. (7150 lbs.) | 520 kg. (1146 lbs.) | .602 | — | — | — | Damaged by broken airscrew and withdrawn |
| 6 | Rohrbach Ro. VII | 2 B.M.W. IV 230 h.p. each | 2046 kg. (4520 lbs.) | 3300 kg. (7273 lbs.) | 520 kg. (1146 lbs.) | .610 | 7.75 | — | — | Withdrawn |
| 7 | Junkers W.33 | Junkers L.5 230 h.p. | 1413 kg. (3100 lbs.) | 2100 kg. (4628 lbs.) | 300 kg. (661 lbs.) | .488 | 5.95 | 194 k.p.h. (120 m.p.h.) | 89 k.p.h. (55 m.p.h.) | Completed contest |
| 8 | Junkers W.34 | Jupiter 420 h.p. | 1422 kg. (3140 lbs.) | 2100 kg. (4628 lbs.) | 308 kg. (678 lbs.) | .476 | 4.33 | — | 83 k.p.h. (51 m.p.h.) | Sank after alighting in preliminary trials |
| 9 | Heinkel H.E.5 | Napier Lion 450 h.p. | 1634 kg. (3600 lbs.) | 2500 kg. (5520 lbs.) | 485 kg. (1070 lbs.) | .530 | 4.25 | 203 k.p.h. (126 m.p.h.) | 105 k.p.h. (68 m.p.h.) | Finished and placed first |
| 10 | Heinkel H.E.5 | Jupiter 420 h.p. | 1515 kg. (3340 lbs.) | 2500 kg. (5520 lbs.) | 480 kg. (1059 lbs.) | .650 | 5.7 | 195 k.p.h. (121 m.p.h.) | 88 k.p.h. (55 m.p.h.) | Crashed in seaworthiness trials |
| 11 | Heinkel H.D.24 | B.M.W. IV 230 h.p. | 1411 kg. (3102 lbs.) | 2080 kg. (4584 lbs.) | 194 kg. (427 lbs.) | .473 | 11.5 | 151 k.p.h. (94 m.p.h.) | — | Completed contest |
| 12 | Heinkel H.D.24 | B.M.W. IV 230 h.p. | 1384 kg. (3050 lbs.) | 2121 kg. (4660 lbs.) | 191 kg. (421 lbs.) | .532 | 7.6 | 168 k.p.h. (104 m.p.h.) | — | Completed contest |
| 16 | Junkers A.20 | Junkers L.5 230 h.p. | 1139 kg. (2550 lbs.) | 1763 kg. (3885 lbs.) | 252 kg. (555 lbs.) | .556 | 4.95 | — | — | Damaged float in preliminary test and withdrawn |
| 17 | Heinkel S.1 | Rolls Eagle IX 360 h.p. | 1697 kg. (3740 lbs.) | 2475 kg. (5450 lbs.) | 310 kg. (883 lbs.) | .458 | 9.0 | 180 k.p.h. (112 m.p.h.) | 64 k.p.h. (40 m.p.h.) | |

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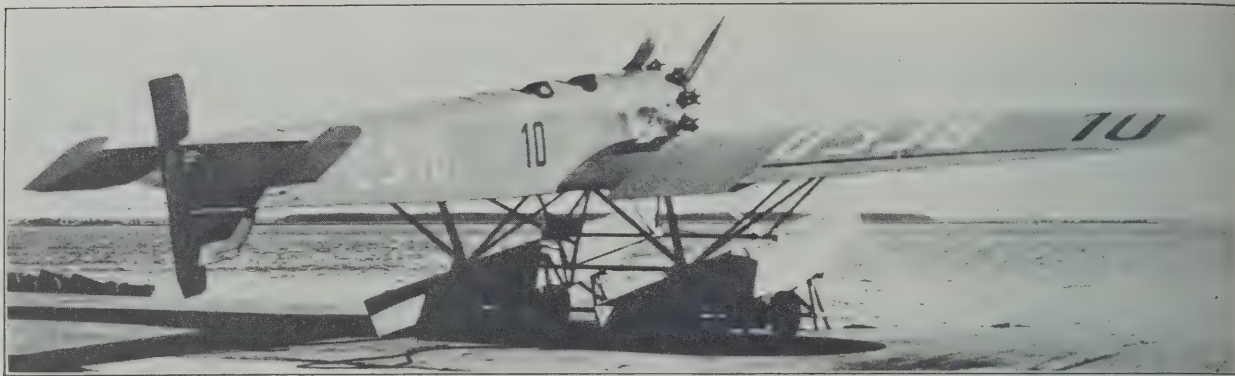
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THE HEINKEL-JUPITER MONOPLANE.—The Heinkel H.E.5, a sister machine of the winner of the German Seaplane Competition, but fitted with the 420 h.p. Jupiter engine. This machine, while leading in the Competition, unfortunately damaged a float in alighting during the final seaworthiness tests and was rammed and sunk by a motor-boat while attempts were being made to take it in tow.

its sister, No. 5, did not complete the tests, but No. 5 went round the coastal flights out of the competition. No. 16 (Junkers A.20) crashed a float on July 16, and did not continue.

During the Coastal flights No. 2 (L.F.G. V.60) was forced down at sea by engine failure, and the pilot was washed overboard and drowned, the machine and mechanic being afterwards salvaged. No. 3 (L.F.G. V.61) also had to alight at sea on July 28, and was so badly damaged as to sink, the crew being saved by a torpedo boat. No. 8 (Junkers W.34) was forced down on the same day near a mark boat, but, owing to the sea could not be towed in for 40 hours, when it was brought to Rossitten with floats intact.

Nothing is known as to the fate of No. 12 (Heinkel H.D.24), but the five remaining competitors—No. 10 (Heinkel H.E.5,

Jupiter), No. 9 (Heinkel H.E.5, Lion), No. 7 (Junkers W.33, L.5 engine), No. 12 (Heinkel H.D.24, B.M.W.), and No. 17 (Heinkel S.1, Rolls Eagle IX), completed the coastal flights, in the above order of merit.

No. 10, which was leading, damaged both floats in the first alighting of the seaworthiness tests, and was then rammed by a motor-boat and sank. No. 17 was crashed in the third alighting. Thus No. 9 (Heinkel H.E.5, Napier Lion), No. 7 (Junkers W.34, Junkers L.5 engine), and No. 11 (Heinkel H.D.24, B.M.W.IV) were the only machines to finish.

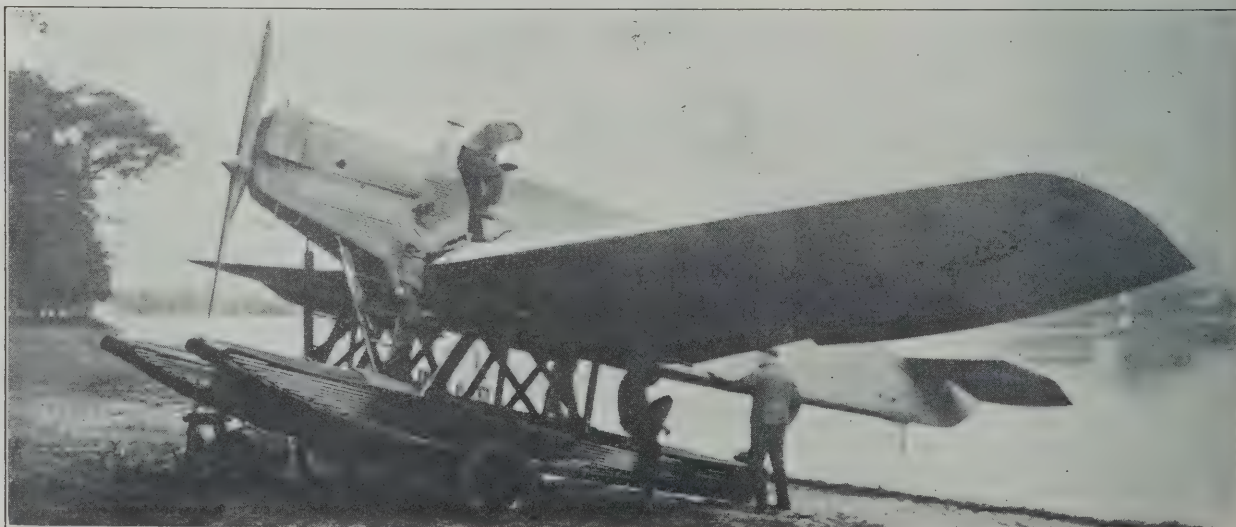
Of these No. 9 is definitely first, having lost no marks and incurred no penalties in the course of the trials and bearing the highest figure of merit on the formula. The precise order of placing of the other two is open to doubt as yet.

Thus a British engine carried the winner through this

SPECIFICATIONS OF THE COMPETING SEAPLANES.

| | *Type. | Engine. | Span. | Length. | Height. | Wing Area | Weight, Empty. | Weight, Loaded. | Wing Loading | Power Loading. | Speed, Max. | Speed, Cruising. | Speed, Landing. | Climb to 1,000 m. | Ceiling. |
|-------------------|----------|------------------------|-------|---------|---------|-------------|----------------|-----------------|--------------|----------------|--------------|------------------|-----------------|-------------------|----------|
| L.F.G. V.59. | T.M.S. | 230/300 h.p. B.M.W. | 19.0 | 11.38 | 4.1 | 52 sq. m. | 1430 | 2200 | 42 | 8.8 | 151 | 135 | 70 | 11 mins. | |
| L.F.G. V.60. | T.B.S. | 230/300 h.p. B.M.W. | 15.0 | 10.6 | 3.8 | 52 sq. m. | 1350 | 2050 | 39.5 | 9.3 | 152 | | 70 | 8 mins. | |
| L.F.G. V.61. | T.M.S. | 420 h.p. Jupiter | 19.0 | 11.38 | 4.1 | 52 sq. m. | | | | | 185 | 160 | 70 | 7 mins. | |
| Caspar C.29. | T.B.S. | 400 h.p. Hispano-Suiza | 13.0 | 9.98 | 4.1 | 47 sq. m. | | 1950 | 41 | 4.9 | 200 | | 65 | 4 mins. | 6000 |
| Rohrbach Ro. VII. | 2 P.M.B. | 2 230/300 h.p. B.M.W. | 17.4 | 13.2 | 5.5 | 40 sq. m. | 2000 | 3360 | 84 | 7.3 | 210 at 2000m | | 116 | 5 mins. | 5000 |
| Junkers W.33. | T.M.S. | 230/310 h.p. Junkers | 18.35 | 10.9 | | 43 sq. m. | 1383 | 2100 | 49 | 6.8 | 185 | 150 | | | 4500 |
| Junkers W.34. | T.M.S. | 420 h.p. Jupiter | 18.35 | 10.9 | | 43 sq. m. | 1350 | 2100 | 49 | 4.5 | 205 | 160 | | 3.6mins. | |
| Heinkel H.E.5. | T.M.S. | 450 h.p. Napier Lion | | | | 48.8 sq. m. | 1640 | 2500 | 51.08 | 5.27 | 207 | | 85 | 3.6mins. | 6500 |
| Heinkel H.E.5. | T.M.S. | 420 h.p. Jupiter | | | | 48.8 sq. m. | 1500 | 1920 | 39.3 | 4.28 | 200 | | 75 | 2.6mins. | 7500 |
| Heinkel H.D.24. | T.B.S. | 230/300 h.p. B.M.W. | | | | 50.1 sq. m. | 1350 | 1960 | 39.2 | 7.85 | 160 | 155/160 | 74 | 8 mins. | 4000 |
| Gebrecht W.3. | 3 T.M.S. | Three 110 h.p. Thulin | | | | | 1800 | | | | 150 | | | | |
| Dornier Do.E. | T.M.B. | 420 h.p. Jupiter | | | | | | | | | | | | | |
| Junkers A.20. | T.M.S. | 230/310 h.p. Junkers | 15.27 | 9.45 | 3.1 | 28.1 sq. m. | 1090 | 1600 | 57 | 8.2 | 170 | | | | 4000 |
| Heinkel S.1. | T.M.S. | 360 h.p. Rolls-Royce | 18 | 12.65 | 3.86 | 52.5 sq. m. | 1700 | 2450 | 46.7 | 6.8 | 185 | | | 4½ mins. | 5500 |

*T.M.S.—Tractor monoplane float seaplane. T.M.B.—Tractor monoplane flying boat. T.B.S.—Tractor biplane float seaplane.
3 T.M.S.—Three-engined tractor monoplane float seaplane. 2 P.M.B.—Two-engined pusher monoplane flying boat.



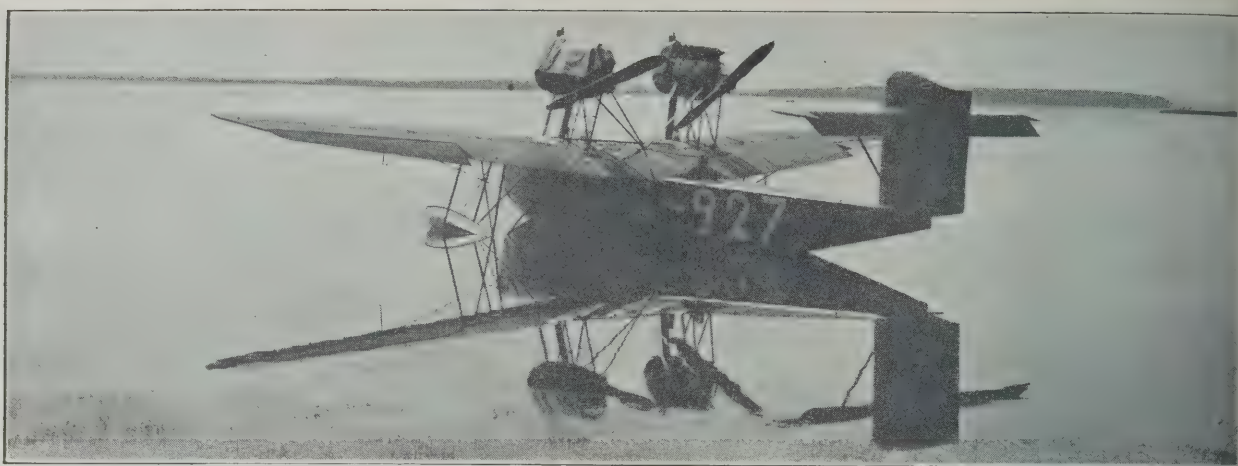
THE JUNKERS W.33.—One of the three machines to survive the German Seaplane Competition. Its final position has not yet been determined as it has not yet been decided whether it should be penalised for having its engine changed early during the trials.

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THE ROHRBACH Ro.VII MONOPLANE.—This machine, designed as a fast mail or passenger carrier, is in reality a small version of the Ro.II which is being constructed under licence in this country by Wm. Beardmore and Co. Ltd. The engines are two 230 h.p. B.M.W.IVs. and, unlike the Ro.II, they drive pusher airscrews.

series of very severe tests without the slightest hitch. It is worthy of remark, that had it not been for the activities of the rescuing motor-boat, No. 10, a sister machine except for engine, but also with a British engine, would very possibly have been repaired and completed trials, and as it was leading its sister on formula, would have taken a very high place in the prize list.

In the table herewith are given such data as to performance as is available. It should be noted that the weights are those measured for the competition, and at which the machines competed, and that sister machines therefore have slightly different weights, which will not generally agree accurately with those given in general specifications for the individual types.

MORE AIR-TROTTING.

Lient-Col. Sir John Rhodes, Bart., a member of the London Aeroplane Club, and the owner of a D.H. Moth, has just completed a four-days' tour of the West and South of England, the object of the tour being primarily, a holiday, and secondly to determine the running costs of a Moth.

He left Stag Lane on Aug. 3, with Mr. P. G. M. Sparks as passenger, and flew to Sealand, Chester, with stops at Whitley Abbey (Coventry), Castle Bromwich (Birmingham), and Woodford (Manchester).

On Aug. 4 he flew to Tangmere (Bognor), with an intermediate stop at Brockworth (Cheltenham).

On Aug. 5 he did some local flying at Tangmere, and then went on to Hamble (Southampton), Cowes (Isle of Wight), Bournemouth, and back to Tangmere.

On Aug. 6 he did some more local flying round Tangmere district, and then flew to Manston (Margate), and back to Stag Lane via Thameshaven, Romford and Enfield. His total mileage was 792, made in 14½ hours flying time, with a total consumption of 60 gallons of petrol and eight gallons of oil.

Sir John cruised at about 70 m.p.h. on the "pitot," but according to his log his actual speed over the ground worked out at about 51 m.p.h. This was due to two causes. In the first place he was flying into a head wind during most of the tour, and secondly he took the precaution, a very wise one, of gaining height before leaving the vicinity of the aerodrome.

The Moth and its Cirrus engine ran perfectly throughout and received no attention except for refuelling. The petrol consumption worked out at 3.9 gallons per hour and 13.2 miles over the ground per gallon, a figure that would have been considerably better had the wind been more favourable.

The direct expenses of the trip were as follows:

| | £ | s. | d. |
|--|----|----|----|
| 60 gallons petrol, including some benzol at 2s. 1d. per gallon | 6 | 5 | 0 |
| Two gallons oil at 7s. per gallon | 14 | 0 | |
| Landing fees | 10 | 0 | |
| Housing fees | 15 | 0 | |
| | £8 | 4 | 0 |

This shows an expense of 2.48 pence per mile, a figure that compares very favourably with the cost of motoring, with very few of the inconveniences of the latter sport.

At present there are too few landing grounds throughout the country, and a method of sign-posting the ground for the air tourist should be considered.

Certain railway stations on the London—Paris route have the names painted on the roofs, and it would seem that this scheme carried out not only by railways but by factories

and other large buildings in other parts of England would cost but little and at the same time be of considerable value to the air-trotter.

The question of municipal landing grounds, such as exist in America and Germany, would appear to be out of the question, at the present time, at any rate, in this very conservative country, but it should be quite feasible to arrange with farmers and owners of property throughout England to mark certain fields, and to arrange a set scale of landing and storage fees.

This scheme could be quite easily arranged, and if a recognised method of marking be adopted and the question of the proximity of a main road and garage or petrol-filling station be taken into consideration when determining the position of the landing field, the future of air touring should be very favourable.

The various joy-ride firms have already ear-marked fields for their own purposes all over England. Surely a number of these might become permanent landing grounds. Grass-land becoming arable in different years could be notified to pilots and Clubs.

This flight of Sir John Rhodes' together with that of the Master of Sempill made last Whitsun, both on D.H. Moths, can be regarded as very commendable pioneer efforts.

The only drawback to the popularisation of air touring by the private owner seems to be the cost of suitable aircraft. Apropos this, the de Havilland Co. are shortly to make an interesting announcement concerning the price of the Moth. Beyond making this bare announcement, one can only say that the question of the establishment of a chain of Moth Service Stations and A.A. Air Scouts is not of the so very far-distant future.—L. B.

THE FLYING CLUBS.

The Newcastle-upon-Tyne Aero Club.

Flying report for week ending Aug. 8.

Total time for the week, 47 hrs. 30 mins., of which 21 hrs. were flown on LX and 26 hrs. 30 mins. on LY.

Dual 23 hrs. 50 mins., Solo 20 hrs. 25 mins., Passenger flights with Mr. Parkinson 3 hrs. 15 mins.

The above total easily beats all previous records for one week. A further record for the Club was made on Sunday, the 8th, when 11 hrs. 15 mins. was completed. All, of course, on the two original Club Moths.

The following members flew under instruction, with Mr. Parkinson:—Col. Sir Joseph Reed, Messrs. Thirlwell, Twine, Palmer, Irving, Middleton, J. Bell, Barnes, E. C. Kennedy, J. M. Davidson, V. S. Davidson, Stawart, Howard, Bruce, Gilmore, Turnbull, Campbell, Bainbridge, A. Bell.

Dr. Dixon and Mr. H. H. Leech had secondary dual.

Members who flew solo:—Messrs. H. H. Leech, C. Thompson, F. H. Phillips, Dr. Dixon.

Pilot members who flew, carrying passengers named:—

Mr. P. Forsyth Heppell with Mr. Herdman.

Mr. W. Baxter Ellis with Mr. Irwin. Mr. Ellis also flew to Selby and back with Mr. W. G. Johnson, on Saturday.

Mr. R. N. Thompson flew with the following as passengers:—Mr. Bain, Mr. V. S. Davidson, Mr. Lisle, Mr. Emmerson, and Miss Davis.

Mr. N. S. Todd with Mr. Longfield, Mrs. H. A. Reid, Mr. and Mrs. Dowson, Mr. and Mrs. Brown, Miss Peacock, and Dr. Dixon.

Mr. Parkinson carried the following passengers:—Mr. Snow, Mr. Holland, Mr. L. Dixon, Mr. Thomkins (of the *Newcastle Chronicle*), Mr. and Mrs. J. H. Davis, Mr. J. T. Thompson. Mr. Parkinson also flew to Bamburgh with Mr. P. F. Heppell, who stayed there for the week-end.

On August Bank holiday the Club was visited by Mr. George Grey Butler of Ewart Park, Wooler, and by Mr. C. G. Grey of THE AEROPLANE. They were much interested in the work of the Club, which was in full swing on that day (including Badminton), in spite of a disagreeable drizzle. All the members of the party flew, Miss Irene Butler, Miss Marriner, Mr. Butler, Mr. Schulenberg and Mr. Grey flying with Mr. Parkinson, and Miss Butler with Mr. Baxter Ellis.

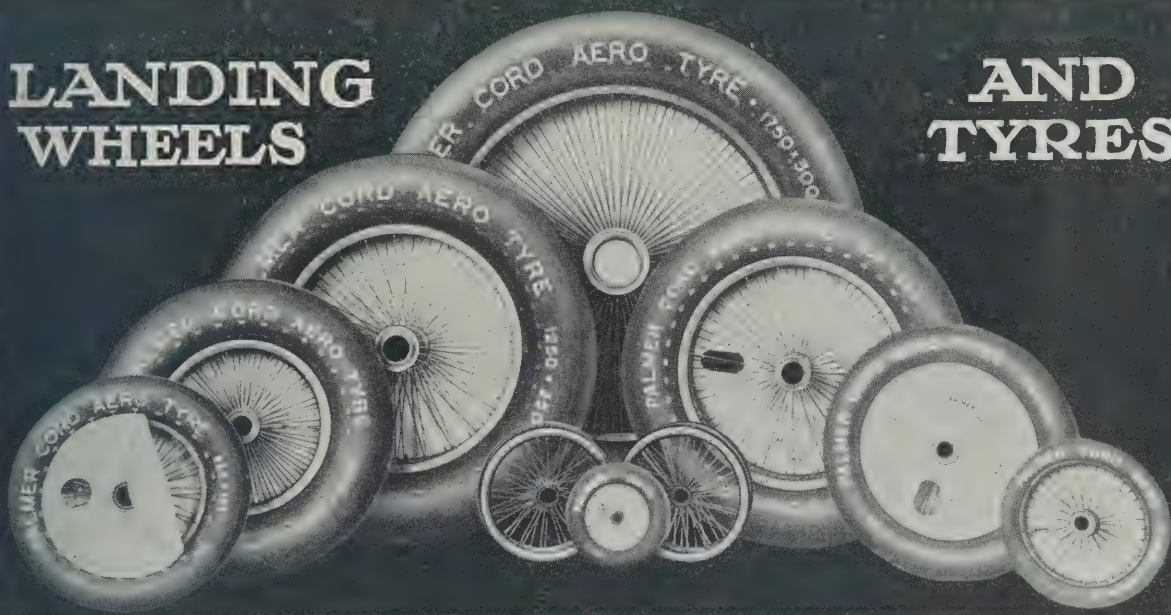


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|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 200 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
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Messrs. West and Barnes of the Yorkshire Club also visited Cramlington on the Bank Holiday, taking a busman's holiday on the Yorkshire Moth.

The Club will hold its first Flying Meeting on Saturday, Sept. 4, and it is hoped that, given the support of the remaining Clubs and fine weather, the result will be satisfactory. Promises of valuable trophies and prize money have already been received, and it is confidently believed that these will be of an attractive nature.

The Lancashire Aero Club.

Report for week ending July 23 (delayed).

Mr. Stack gave instruction to:—Messrs. Leeming 1 hr. 20 mins., Agar 45 mins., Moss 40 mins., Crossthwaite 30 mins., Crabtree 30 mins., Pattraux 20 mins., Gattrell 20 mins. Total 4 hrs. 35 mins.

Mr. Cantrill gave instructions to:—Messrs. Bartram 1 hr. 5 mins., Moss 35 mins., Wilkinson 50 mins., Tummers 20 mins., Jenkinson 20 mins., Crossthwaite 20 mins., Newton 20 mins., Goodyear 10 mins., Prince 10 mins. Total 3 hrs. 50 mins.

Mr. Scholes gave instruction to:—Messrs. Anderson 45 mins., Moss 45 mins., Leeming 20 mins. Total 1 hr. 50 mins.

Solo flights by Messrs. Goodfellow 45 mins., Leeming 30 mins., Wilkinson 20 mins., Michelson 20 mins., Lacayo 20 mins. Total 2 hrs. 25 mins.

Tests occupied 4 hrs. 55 mins. Joy-rides 1 hr. 30 mins.

Total time flown 19 hrs. 5 mins.

Report for week ending July 31.

Mr. Stack gave instruction to:—Messrs. Costa 2 hrs. 10 mins., Agar 1 hr. 5 mins., Barnes 50 mins., Chapman 50 mins., Fleming 40 mins., Hardy 40 mins., Gerrard 40 mins., Michelson 35 mins., Foxcroft 35 mins., Moss 35 mins., Fallon 30 mins., Lowe 30 mins., Benson 20 mins., Scott 20 mins., Cantrill 15 mins., Scholes 10 mins. Total, 10 hrs. 45 mins.

Mr. Cantrill gave dual to:—Messrs. Leeming 1 hr. 5 mins., Bartram 55 mins., Miss Brown 40 mins., Hardy 20 mins. Total 3 hrs. 20 mins.

Mr. Scholes gave dual to:—Messrs. Wilkinson 1 hr., Leeming 1 hr., Crossthwaite 35 mins. Total 2 hrs. 35 mins.

Solo flights by Messrs. Scholes 1 hr. 55 mins., 1 hr. 45 mins., Leeming 35 mins., Michelson 20 mins., Agar 15 mins., Crabtree 10 mins. Total 5 hrs. Tests occupied 1 hr. Joy-rides 55 mins.

Total for week 23 hrs. 35 mins.

Mr. Goodyear made the required flights for his Certificate on Sunday. Mr. Agar, on Friday, made his first solo, since which day he has been flying solo on every possible occasion, and hopes to attempt the flights for his Certificate within a few days. The Avro with 80 Renault engine, presented to the Club by Colonel M. O. Darby, is being used a great deal, and is a popular bus for cross-country work.

Several cross-country routes have now been approved, and "A" Licence pilots or pupils with an Instructor may fly on these. No cross-country flying is permitted except along the recognised routes.

Among the visitors to the aerodrome this week were the Duchess of Bedford, and Mr. Charles Barnard. Mrs. Lynn landed on Sunday on her way from London to Altrincham. Mr. Lacayo gave Mr. D. F. Dyson a cross-country trip of 55 mins. on Saturday.

Report for week ending Aug. 8.

The aerodrome has been closed for Staff holidays and therefore on only two days has flying taken place. In these two days, however, a total of 23 hrs. 20 mins. was put up.

Mr. Stack gave instruction to:—Messrs. Costa 2 hrs. 20 mins., Entwistle 1 hr. 15 mins., Hope 55 mins., Fray 45 mins., Gattrell 45 mins., Lacayo 40 mins., Jenkinson 35 mins., Foxcroft 20 mins., Shute 15 mins., Rodman 15 mins., Leeming 10 mins., Goodyear 10 mins., Goodfellow 10 mins. Total 8 hrs. 35 mins.

Mr. Cantrill gave dual to:—Messrs. Benson 40 mins., Dyson 25 mins. Total 1 hr 5 mins.

Mr. Scholes gave dual to:—Messrs. Crossthwaite 55 mins., Newton 50 mins. Total 1 hr. 45 mins.

Solo flights by Messrs. Goodyear 2 hrs. 20 mins., Leeming 2 hrs. 20 mins., Agar 1 hr. 15 mins., Goodfellow 1 hr. 10 mins., Lacayo 20 mins., Williams 25 mins., Crabtree 15 mins. Total solo 8 hrs. 35 mins. Tests occupied 1 hr. Joy-rides 2 hrs. 20 mins. Total time flown 23 hrs. 20 mins.

Mr. Lacayo gave D. F. Dyson a cross-country flight of 55 mins. Cross-country flying—on the approved routes—is becoming a common pastime with the "A" Licence pilots. Dr. Wilkinson flew LV from Leeds on Friday and Mr. Leeming visited Sealand on Saturday. A number of circular cross-country trips have also been made.

Mr. Agar made the required flights for his certificate on Saturday, having only gone solo for the first time a few days previously. Mr. Goodyear, who has just taken his "ticket," is also the holder of a Ground Engineer's certificate recently obtained through the Club.

Two Moths have been in use, LV and MQ. LV is at present being overhauled and repainted. The Avro Renault OK is being flown mostly on cross-country and joy-rides by "A" Licence pilots. The Avro Gosport stands ready in the hangar—apparently waiting for a pilot bold enough to tame its somewhat uncertain engine.

The Yorkshire Aero Club.

Report for week ending Aug. 8.

Total hours' flying, 20 hrs. 25 mins. Dual, 14 hrs. 25 mins. Passenger flight, 3 hrs. Joy-rides, 2 hrs. 50 mins. Tests, 10 mins.

The following had dual instruction:—Messrs. Barnes, Wilson, Leatham, Fowler, Ambler, Lax, Watson, Mann, and Harvey.

Miss Woodhead is progressing extremely well and should be our first lady pupil off solo, her keenest rival being Miss McPherson.

Mr. West and the Hon. Secretary, Mr. Barnes, flew up to Newcastle last Monday to discuss inter-Club affairs with the Secretary.

One thinks it would be an excellent idea if the chief officials of the various Clubs could meet once a quarter, or, say, twice a year, taking it in turns to be hosts, and then discuss any new ideas as to the running of the Clubs, and so with experience get down to absolutely the most economical and efficient way of running the Clubs—for the World knows what amateurs we are at present! Anyway, one gives the suggestion for what it is worth.

Our Air Pageant has given a decided fillip to the Club and members are pouring in, but this is leading to congestion and it is only through the help of our few certificated pilots who attend to the joy-rides that we are able to deal with the crowds who choose the evening for their flying.—R. W. K.

The Hampshire Aeroplane Club.

Report for week ending Aug. 7.

As announced last week, the Hampshire Aeroplane Club had arranged to take delivery of its two de Havilland Moths on Aug. 7.

This was duly done according to programme, both machines leaving Stag Lane at 4 p.m.; Mr. F. G. M. Sparks (chief instructor to the London Aeroplane Club) flying G-EBOH and Mr. G. I. Thomson, D.F.C., who has been appointed chief instructor to the Hampshire Aeroplane Club, flying G-EBOI, with Mr. O. E. Simmonds as passenger.

Mr. Simmonds, who was unanimously re-elected Chairman of the Committee at their last meeting, officially accepted delivery of the two Moths on behalf of the Club.

Brooklands was reached at 4.20 p.m., and the machines landed so that Mr. Sparks might pick up Mr. A. N. Clifton, the former Secretary of the Club. The Moths then circled over Brooklands track, and an excellent view of the Grand Prix motor race was obtained. Leaving Brooklands at 5.10 p.m., the machines were flown to Winchester, where a circuit was made over the town for the benefit of members in that district, and then on to Southampton.

Thence the pilots flew to Hamble, the Headquarters of the Club, which was reached at 6.10 p.m. A large number of Club members and their friends witnessed the arrival of their new possessions. There was great jubilation on seeing the registration letters of the machines, G-EBOH and G-EBOI, and they were immediately christened "Gee Bo" and "Gee Boy."

After landing Mr. Sparks took up "Gee Bo" and gave an exhibition of stunting which was very much appreciated. Mr. Thomson then took up Mr. Shepherd of *The Southern Daily Echo* for a joy-ride.

Mr. G. I. Thomson, who, as previously mentioned, has been appointed chief instructor to the Club, began his duties on Aug. 7. He has seen considerable war service, and recently been responsible for passing out every officer training on D.H.8as at Netheravon for the Fleet Air Arm. In him the members of the Hampshire Aeroplane Club have a really keen and conscientious instructor, who, in addition, is possessed of that personality which immediately gives his pupils a feeling of confidence.

The Club has appointed Mr. T. McCracken, late chief engineer to Northern Air Lines Ltd., as ground engineer, and, here again, there is no doubt that a happy choice has been made.

The alterations to the Club-house and hangar are well in hand, and really fine premises should result. At the present time, flying is being done from the lower aerodrome, as the levelling process is not yet finished on the larger aerodrome which will ultimately be the flying ground of the Club.

Next Saturday and Sunday, the 14th and 15th, will be Associate Members' Days, when in addition to the normal instruction of flying members, associate members may take short flights at a charge of five shillings each. Tea will be available on the aerodrome on both of these days.

AIR AFFAIRS IN PARLIAMENT.

CIVIL AVIATION IN THE EMPIRE.

In the House of Commons on Aug. 4, in reply to a question by MR. RAMSDEN, the SECRETARY OF STATE FOR AIR said that a system was in force for the regular interchange of information regarding experiments and new schemes for the development of civil aeronautics between India, the Dominions, the Colonies and Great Britain by means of "liaison letters" relating to developments in civil aviation, both technical and general, and of the mutual exchange of periodical and recurrent publications. The results obtained had been of considerable value and should prove to be more important in future.

AIR POLICY.

In the House of Commons on Aug. 4, in reply to a question by CDR. BELLAIRS, the SECRETARY OF STATE FOR AIR said that he was aware that this country did not hold a single record in aviation. He did not see any connection between the winning of records, which ordinarily fell to machines specially designed or modified for racing purposes and not suitable for general use, and the present air policy of His Majesty's Government, which aimed at securing an efficient Air Service and establishing civil aviation on a commercial basis as early as possible. He did not see his way to having the matter of aviation control inquired into by a public committee.

UNCIVIL AVIATION.

On July 23, at Kingston County Court, Mr. Alfred Turner, of Addlestone, was awarded £21 damages in a case against the South Counties Aviation Company, of Brooklands. The Plaintiff stated that last Christmas Eve an aeroplane came down in his garden, and damage was done to his chicken houses, five pullets being killed. The machine was wrecked, and the pilot and passenger slightly injured. The defendants did not appear, and judgment was given against them.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 24; Tuesday, 29; Wednesday, 30; Thursday, 35; Friday, 33; Saturday, 31; Sunday, 20

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin. Machines 105, passengers 714, freight 23 tons.

AIR UNION:

Paris—London: Machines 45, passengers 304, freight 12½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 24, passengers 115, freight 2 tons

SABENA:

Brussels—London: Machines 12, passengers 67.

DEUTSCHE LUFTHANSA AG:

Berlin—London: Machines 2, passengers 13.

PRIVATE:

Machines 4, passengers 7.

Total number of trips by British Machines, 109, carrying 721 passengers. Foreign Machines, 83, carrying 499 passengers.

Comparative Figures:

Week ending Aug. 8:

Machines, 192; Passengers, 1,220; Crews, 237; Total personnel, 1,457.

Corresponding week, 1925:

Machines, 169; Passengers, 941; Crews, 242; Total personnel, 1,153.

Corresponding week, 1924:

Machines, 131; Passengers, 930; Crews, 225; Total personnel, 1,155.

Corresponding week, 1923:

Machines, 146; Passengers, 682; Crews, 233; Total personnel, 915.

Corresponding week, 1922:

Machines, 209; Passengers, 734; Crews, 342; Total personnel, 1,076.

Corresponding week, 1921:

Machines, 155; Passengers, 462; Crews, 144; Total personnel, 605.

Corresponding week, 1920:

Machines, 115; Passengers, 240; Crews, 144; Total personnel, 384.

Croydon Notes.

The Argosy is proving highly successful as an air liner. Altogether last week she made nine trips between Paris and London, during which she carried 129 passengers. All her journeys occupied under 2½ hours. Messrs. Barnard, Hinchliffe and Rogers were the Argonauts.

Lt.-Col. Minchin had some bad luck on Tuesday morning. He was returning from Ostend on a hard-worked D.H.50 with three passengers, and when landing the undercarriage collapsed, and he sat down on his, or rather the machine's, tummy. The lower plane and a longeron were damaged, but neither the passengers nor the pilot were hurt. One is assured that there was nothing in the actual landing that could have caused the break, and so the mishap must be put down to the machine having been sinned against in the past.

Discussing the question of the decarbonisation of engines with Mr. George Bradley (late of Croydon, and now co-operating with Mr. Dudley Travers in supplying holiday-makers at Ostend with *The Daily Mail* by air), he told one of an extremely good dodge for the inclusion of which in these notes one makes no apology. Everyone at Croydon has motor-vehicles these days.

Mr. Bradley told one that if an engine is overdue for decoking, and one has not the time to perform or cause to be performed the said operation, it is a good plan to remove the spark plugs (K.L.G. of course always) and insert half a teaspoonful of salt in each. Then replace plugs and start engine, and most of the carbon will come out through the exhaust.

One tried it on the Morris-Oxford-and-Asquith, which had done 9,000 miles without decoking (Mr. Morris says 3,000 miles is enough), and in consequence had developed a very marked knock. Much carbon came out at the first few explosions and the knock disappeared.

So if you see Mr. Hall of Imperial Airways Ltd. apparently trying to catch his Eagles, Lions, and Jaguars, with the aid of a salt-cellar, you will know that he is only decoking his engines and not trying to put salt on their tails.

If anyone finds this trick is successful, they may at any time signify their appreciation of same in usual manner, but, if it is a failure and causes their engines to blow up, then they can blame Mr. Bradley.—G. D.

A Fairey Re-formation.

THE FAIREY AVIATION CO. LTD.—Registered as a public company on Aug. 3, with a nominal capital of £10,000 in £1 shares (10,000 preference and 100 ordinary). The preference shares rank first for a cumulative dividend at 7 per cent. per annum, and, in a winding up, for return of capital and arrears of dividend. Each ordinary share confers one vote, but preference shares confer none. The objects are to adopt an agreement with a company of the same name (incorporated in 1925) and its liquidator; to manufacture, buy, sell, let on hire, and deal in, waterplanes, aeroplanes and aerial conveyances and the component parts thereof (including engines); to acquire, provide, build and maintain hangars, garages, sheds and aerodromes, etc. Minimum cash subscription: Seven shares. The directors, to number not less than three, nor more than seven, are: C. R. Fairey, Grove Cottage, Iwer, Bucks, aeronautical engineer. F. G. T. Dawson, Manor House, Hamble, Hants aeronautical engineer. C. Crisp, 5, Lansdowne Road, Holland Park, W., solicitor. Lt.-Col. V. Nicholl, D.S.O., D.S.C., Mill House, Stoke Poges, Bucks. M. Wright, 7, Briar Road, Kenton, Middlesex, engineer. The three first-named are permanent.

Remuneration: £250 each per annum (£50 extra for the chairman). Solicitors: Ashurst, Morris, Crisp and Co., 17, Throgmorton Avenue, E.C.

Alterations in Handley Page Ltd.

The files at Somerset House show that certain important alterations have taken place in the directorate and in the financial control of Handley Page Ltd.

Not being a financier, one can make no comment on the changes, nor can one offer an explanation of the recent remarkable rise in the firm's shares. One merely gives the information as it is issued officially:—

CHANGES IN DIRECTORATE.

The directors at July 31, 1926, were:—

S. R. Worley, The Mead, Woodcote Valley Road, Purley, Surrey. The Rev. W. E. B. Barter, 31, Queen's Gate Gardens, S.W.7.

F. Handley Page, Lymes Holmes, Stanmore, Middlesex (director of Handley Page Transport Ltd.).

D. F. Sutherland, 36, Percy Road, Hampton-on-Thames.

Capt. the Hon. Michael Knatchbull, Mersham Heath, Ashford, Kent.

Wing Cdr. Louis Greig, C.V.O., Ladder Stile, Kingston Hill, Surrey.

The last named director is in place of Henry Morgan (resigned). Lt.-Col. John Barrett-Lennard and Sidney Francis St. J. Steadman have both resigned.

SATISFACTIONS OF MORTGAGES.

Satisfaction in full on July 21, 1926, (A) of first mortgage debenture dated June 3, 1925, securing a sum not exceeding £50,000 from the Royal Bank of Scotland; (B) of second mortgage debenture dated June 3, 1925, securing a sum not exceeding £50,000 from the Royal Bank of Scotland, and (C) mortgage and charge dated Dec. 31, 1920, securing all sums owing to Barclays Bank Ltd.

MORTGAGES AND CHARGES.

Debenture dated July 21, 1926, to secure £120,000, charged on the Company's undertaking and property, present or future, including uncalled capital, but excluding the freehold property mentioned below.

Also legal charge of same date on the Company's freehold property at Hendon or elsewhere, as collateral security for the above sum.

Holders: Royal Bank of Scotland, Edinburgh

PERSONAL NOTICES.

DEATHS.

CARR.—In Chester Royal Infirmary, on Aug. 1, as the result of a flying accident sustained on July 13, L.-AC. Robert Lloyd Carr, R.A.F. CRUNDEN.—At Multan, India, on Aug. 1, as the result of a flying accident, L.-AC. Percy William Edward Crunden, R.A.F.

MARRIAGE.

CLARKE—CRABTREE.—On July 29, at Worthing, Eric Hugh Clarke son of the Hon. and Mrs. Hugh Clarke, of Savanna-la-Mer, Jamaica to Aileen Margaret, eldest daughter of Dr. E. F. Crabtree, of Ashurst Lodge, Worthing.

"Worn but not felt"



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The Collar for R.A.F. Officers

No other collar gives such real comfort as the latest Van Heusen—style 66. It does not bind, cling or shrink—it is made of the finest Egyptian cotton woven in a natural curve to fit your neck. Ask your hosier—judge for yourself.

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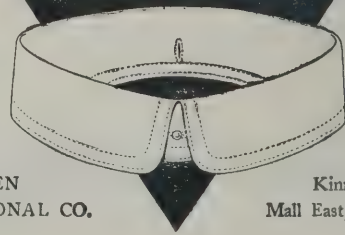
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THE AEROPLANE—AUG. 18, 1926.

TWO DAYS TO CAIRO.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

Vol. XXXI. No. 7.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

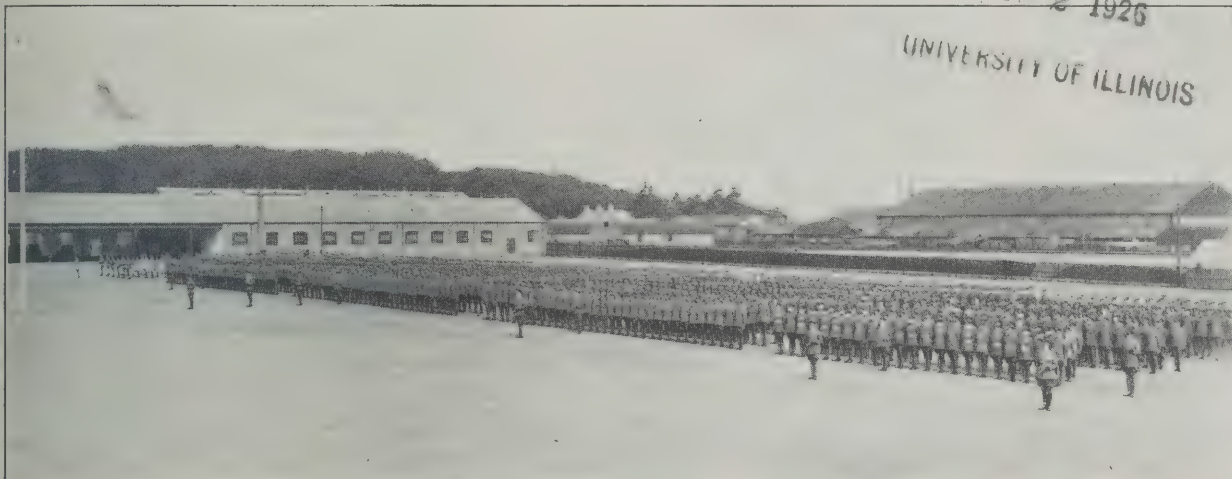
"SUPERNA PETIMUS."

(The motto of the R.A.F., Cranwell.)

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THE PASSING OF THE BOYS' WING, CRANWELL:—One of the last parades of No. 4 Apprentices' Wing, R.A.F., at Cranwell. This Wing has now been moved to Halton, and will eventually be replaced at Cranwell by the School of Technical Training (Men) now at Manston.

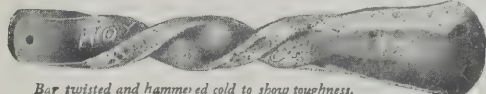
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AUG. 18,
1926.

THE AEROPLANE

Incorporating
Aeronautical Engineering

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ON COMMERCIAL AVIATION.

A week or two ago, in the House of Commons, Commander Bellairs, late R.N., asked whether the Prime Minister was aware that this country holds no Air Records? Mr. Baldwin replied officially, "though of course in strictly official language, to the effect that as Prime Minister, he did not care what is vulgarly called two hoots whether we do or not. He said that the Government's policy was to secure an efficient Air Service and to put Civil Aviation on a commercial basis.

But official views are not always personal views. And in any case Aviation has a firm friend in our distinguished Air Minister, Sir Samuel Hoare.

As anyone must realise who thinks of all that Sir Samuel has done for British Aviation, how he has preached air-mindedness at all times all over the country, and how he has risked his own valuable neck and that of his lady wife in aeroplanes which were certainly risky even though they might not be positively dangerous, and how he has fought with beasts at Ephesus, or rather with the Technical Department, for the liberty of the Aircraft Industry and its right to describe, illustrate, advertise and sell its latest products to foreign Powers, Sir Samuel must be personally gravely concerned about our backwardness in record-breaking.

Sir Samuel was, one believes, largely responsible himself for the scheme, of which we heard so much some six months ago, and have heard so little since, whereby instead of building racing seaplanes to go and capture the Schneider Trophy from America, we were to build record-breakers which would beat the American Schneider racers' times and then try to persuade the World that it was not worth our while to go and win the Trophy, as we had got the fastest machines.

Whether their non-appearance is due to interference by the Air Ministry's Experts or to the Coal Strike (which seems to be blameable for everything, all the way from bad trade to bad weather), one dares not even guess. But we are still waiting for those records to be beaten.

A few months ago, Squadron Leader Hodsoll, R.A.F., writing in *The Journal of the United Service Institute of India*, said, by inference, if not in those precise words, that the Aircraft Industry is a parasite on the Government and as such can never be as useful to the Nation as it would be if it were a commercially successful and self-supporting Trade. He added that the object of all Governments was

"to turn those parasitic tendencies into commercial and profitable channels."

What he said applies equally to the Aircraft Industries of all other Nations. So people in the British Trade need not be angry with Squadron Leader Hodsoll for saying so, nor with THE AEROPLANE for publishing his sayings, as some people were when one stated that aeronautical engineering is still amateurish and not an exact science.

WHAT IS COMMERCIAL?

The attitudes of mind of the Secretary of State for Air (officially) and of Squadron Leader Hodsoll are well worth considering by those who believe that there is a commercial future for Aviation, and are not content with the doctrine that the commercial manufacture of aeroplanes (of war) pays better than the manufacture of commercial aeroplanes. One is positive that the big money of the future, at any rate till the next war begins and there is another false boom in war machines, will be made out of commercial aeroplanes.

Nobody realises better than oneself the immense advertising value of record-breaking. In some thirty years of commercial life one has seen cycle firms and motor firms rise to the top of the tree by spending vast sums on record-breaking. And one has seen those same firms pass out peacefully, when, filled with self-satisfaction at their success, they have given up strenuous advertising, and have sunk back to the old parrot-cry "Our Goods Are the Best."

But record-breaking alone is no use. It creates a name and secures attention. It brings inquiries and puts one in touch with customers. Yet it is not commerce. It is only a species of free cocktail to induce a diner to order a bigger dinner. It is like the *buckshee* coffee in a Cairo bazaar or the salted almonds in an American Bar. It is a temptation to possible buyers and a sample guaranteeing the excellence of the firm's products. But it brings in no money direct.

Personally one would guarantee to build up a bigger international reputation for a firm by judicious newspaper advertising than by spending the same sum on record-breaking. For, when the records have been broken, one still has to spend vast sums on advertising in the press that one has broken them.

Yet, for those who can afford it, record-breaking does pay. The only question is whether the British Nation or the British Aircraft Industry can afford it.

Candidly, it is not the Air Ministry's job to pay for ad-



FURTHEST NORTH.—Here Air Commodore Weir's D.H.51a (Airdisco engine), flown by Colonel the Master of Sempill, is seen at John o'Groats. On the right, in the soft hat, is seen a shepherd, who, when the machine landed, rushed at it waving his crook. The pilot feared hostile intent, but soon discovered that the demonstration was only an expression of joy at being the first to greet the first man to land at John o'Groats.

vertising the Trade. The Air Ministry's only excuse for buying record-breakers is that out of such machines better war-craft can be evolved. And as a matter of fact such improved craft *could* be produced simply by raising the performance figures in Air Ministry specifications, as has been done by the Flying Services of the United States, and at the same time giving Trade designers a freer hand in detail design.

PARASITES OR PRODUCERS.

In any case, neither record-breakers nor machines evolved therefrom are commercial propositions as such. If the only orders they produce are for war machines, whether ordered by the makers' own Government or by a foreign Power, then the makers are, as Squadron Leader Hodsoll says, parasites living on the blood of the Nations and not producers of anything which tends to the betterment of Humanity.

What we need, and what all Nations need, are aircraft which have in themselves a commercial value and earn their keep. And such aircraft can be built if people will go the right way to work.

Last week one had a few words to say about Civil Aviation, and one remarked that Commercial Flying as such must be considered separately from Air Lines, which exist on Government subsidies (though, because they serve a useful purpose in accelerating communication, they are not parasites), and separately from Sporting Flying, which is only indirectly beneficial. It is commercial to the aircraft constructors, but not to the users of the aeroplanes. The difficulty is to find as yet, a use for aircraft which is genuinely commercial.

COMMERCIAL USE.

For many years THE AEROPLANE has preached that the immediate commercial success of aircraft lies in the direction of Air Survey work, whether direct photographic survey or in the way of forest patrols. And now, as usual, the prophecies which have been given forth in this paper are being justified.

Hitherto most of the big survey work has been done in or for Government Services in the United States and Canada. At first it was done entirely by Government pilots on Government machines. Then private enterprise began to creep in.

The Fairchild people and the Laurentide firm, in the States and in Canada began to get quite big orders from commercial organisations. And Mr. Ronald Kemp, in Burmah, did in the Irrawaddy Delta the first surveys in the Eastern Hemisphere, with the help of Major Cochran-Patrick. Which work he is now continuing in Sarawak with the aid of Mr. Raynham.

It is true that ordinary aerial photography has been carried on as a commercial proposition for a great many years and that quite a number of people have made reasonably good livings out of the taking and selling of air photographs. But the amount of business to be done in this way is not enough to influence the welfare of the Aircraft Industry as such.

Any sort of machine, a Moth or an ancient Avro or the most obsolete of war machines—provided it does not use too much petrol—is quite good enough for taking ordinary photographs of towns or factories or country mansions. The things chiefly to be desired are cheapness in purchase price and economy in running.

SCIENTIFIC AIR SURVEY.

When one comes to consider genuine air survey and the mapping of hitherto unmapped areas one comes up against quite a different proposition. Economy in operation will

still be of very great importance. But mere petrol economy will not be the leading consideration.

One can see the time when aircraft designers will have to consult with survey operators in producing the designs of the best possible survey machine. In fact this is now being done, as will be seen hereafter.

Also, as one remarked in this paper a good many years ago, one can see the time, not so very far ahead, when there will be regular flights, if not squadrons, of air survey aircraft operating all over the World. And these will be accompanied by quite an elaborate ground organisation of trained cartographers.

One interesting point arises from this fact. Pilots who have done some aerial photography are cheap enough, and the supply is plentiful. Map-makers who have been trained as surveyors, Surveying being a branch of Civil Engineering, are, like scientists of most kinds, to be had for about three a penny, thanks to the fact that the genfeel professions are always overcrowded. But it is almost impossible to find a trained surveyor who knows anything about air photography, or an aviator who knows anything about surveying.

One suggests that a thorough training in Surveying should form one of the optional subjects in the new system of Vocational Education, which is part of the Air Council's scheme for Short Service Officers. There is a chance here of entering a profession which, so far from being overcrowded, is absolutely vacant. Only the difficulty would be to find competent teachers.

AN IMPORTANT STEP.

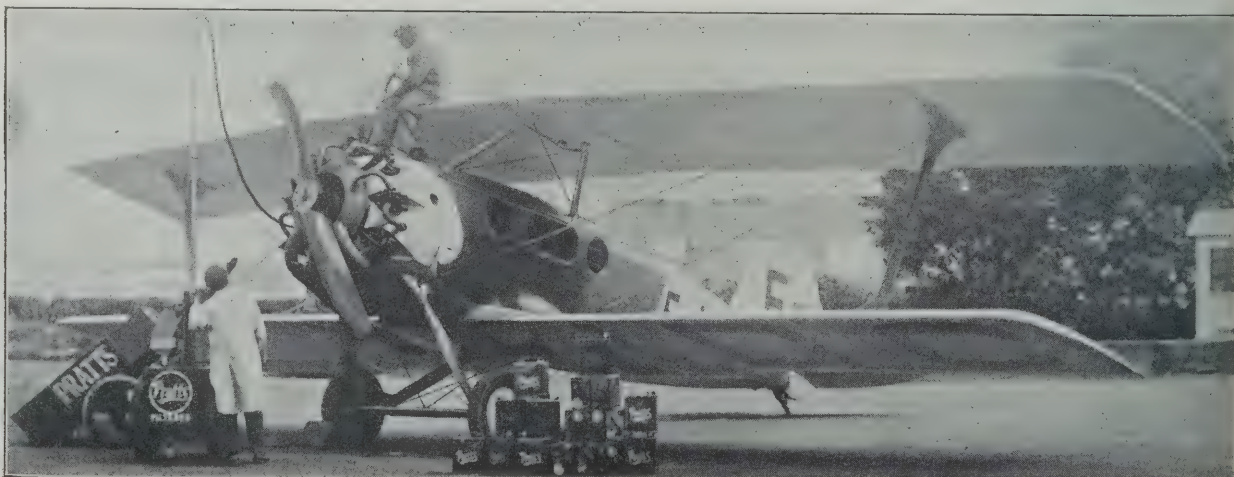
Quite the most important step which has been made so far in this phase of Commercial Aviation is the contract which has just been arranged between the Aircraft Operating Company Ltd. and Minerals Separation Ltd., under which an air survey expedition is to be sent to Northern Rhodesia to do air mapping and reconnaissance of the concessions held by the Rhodesian Congo Border Concession Ltd., of which Minerals Separation Ltd are the general managers.

These concessions cover an area of about 52,000 square miles, and the contract thus constitutes the biggest air survey job which has yet been undertaken.

One regards this contract as indicating the beginning of a new epoch in Commercial Aviation. It marks a point in the progress of Commercial Aviation as important as that reached in aircraft design when Mr. T. O. M. Sopwith and Mr. Fred Sigrist and the late Mr. Harry Hawker produced the famous Sopwith "Tabloid," in 1913, and revolutionised our ideas of what could be done in the way of speed range and of using horse power efficiently.

Quite a number of people had been trying to produce efficient aeroplanes for a long time before that. But the Sopwith-Sigrist-Hawker combination produced the desired result. Similarly quite a number of people have been trying for a long time to obtain an air survey contract of such importance as to elevate Air Survey work into the position of a regular branch of Civil Engineering. And the Aircraft Operating Company has done it.

The decision to send out the expedition was reached by the directors of the Rhodesian Congo Border Concession after most careful investigation of the results of Air Survey operations in the past. Nobody was better fitted to convince them on the subject than were Major Hemming, the General Manager of the Aircraft Operating Company, and Major Cochran-Patrick, whose experience in Burma and on the Orinoco have taught him about as much as there is to know on the subject of air photography and the operation of aircraft for photographic purposes. With them is associated



SEVENTEEN YEARS AFTER.—M. Louis Blériot's private Spad 56 (Jupiter engine) at Croydon, being refilled with Pratt's Petrol, after bringing M. Blériot across the Channel, piloted by M. Bajac. The last and first time M. Blériot flew across the Channel was on July 9, 1909,—the first crossing by air.

The Napier is Consistently Reliable !

DURING the first seven months of 1926, the Napier aero engine has given remarkable proof of its consistent reliability.

Apart from its ordinary Service and Commercial duties in all parts of the world, it has, during this period, added the following astounding performances to its long record:—

Cairo to Cape Town and back to England by four Royal Air Force Fairey machines, each fitted with a single Napier Lion engine - Total engine miles 56,000

Plymouth to Alexandria and back by two Royal Air Force Supermarine 'Southampton' Flying boats, each fitted with two Napier Lion engines " " " 27,600

Spain to Buenos Aires by a Dornier flying boat fitted with two Napier Lion engines, flown by Major Franco- " " " 12,518

In a competition in Germany to discover the best German commercial seaplane, the First Prize was awarded to the only Napier-engined machine entered—the Heinkel-Napier. This was the only machine to come through the competition without any repair or penalty mark.

*All these achievements were accomplished
free of any engine trouble*

For all purposes, in all climates, install the British-built water-cooled

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Colonel H. L. Crosthwait, C.I.E., F.R.G.S., formerly Superintendent of the Survey of India. There is certainly no man better able to supervise the production of orthodox and accurate maps from the still somewhat embryonic art of photographic mapping.

THE RIGHT EQUIPMENT.

At the start of operations the equipment of the expedition will consist of two D.H.9 biplanes, specially adapted for air survey work and fitted with the new A.D.C. Nimbus engines. These engines have been chosen because the aerodromes from which the machines will have to operate are at a height of several thousand feet above sea level and because they will have to get into and out of comparatively small advanced landing grounds. The extra 100 horse power of the Nimbus, over and above the power of the good old reliable Puma which is normally the power plant of the D.H.9, will certainly be wanted.

The Aircraft Operating Co. hope to build a special air survey machine for the work when it expands. The machine will probably be of the three-engined type so as to minimise the risk of forced landings.

Major Cochran-Patrick himself will be in charge of the operations and naturally he will take with him a fully-equipped photographic section with experienced personnel. It will be armed with a new type of camera, said to have been developed by the Royal Aircraft Establishment, which enables one hundred exposures 7 inches by 5 inches to be taken at one loading on a roll film. This camera registers on the edge of the film the time and height at which the exposure was made and the serial number of that particular exposure.

The area to be surveyed is known to contain minerals in quantities and consists of what is known as orchard bush country—though presumably golden apples do not grow on the trees and have to be dug out. The importance of the area may be judged by the fact that the famous Broken Hill copper mine lies just to the South and the Bwana M'Kubwa mines to the North-East of the concession. The railway from Broken Hill to Elizabethville in the Belgian Congo actually running through part of the concession. Also the Belgian Congo country to the North of the concession is proved rich in minerals so that undoubtedly the Rhodesian Congo Border Concession does possess a most valuable property.

Besides that the latest thing in "equipotential" electrical prospecting methods have been tried and proved on the concession. And they indicate very satisfactory supplies of minerals still untouched.

THE EXPEDITION'S JOB.

The first task of the expedition will be to fly over a large portion of the area in a series of parallel lines taking oblique photographs at intervals in such a way as to give a general survey of the whole country for the benefit of the Border Concession's geologists. From these photographs the said geologists will select certain portions of the area for photographic mapping. As vegetation does not grow happily on ground infected by copper, the bald patches will presumably indicate which areas are worth selecting.

These selected areas will then be covered by a series of over-lapping photographs taken with the optical axis of the camera vertical to the earth, and from them a regular mosaic map of the chosen area will be made.

The accuracy of this map will be controlled by points on the ground selected because they show up clearly in the photographs and are easy of access on the ground. The precise position of the points will be fixed by the regular ground survey methods, and on the triangulation of those points photographic maps of high accuracy can be produced.

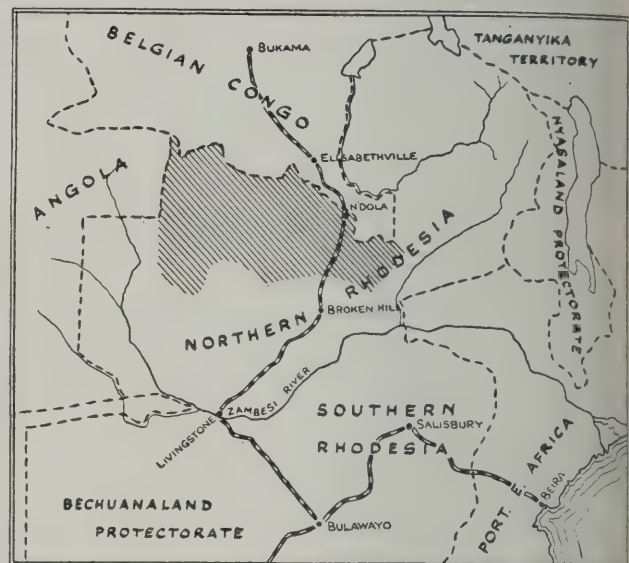
In addition to photograph work the aeroplanes will be used to fly the Border Concession's geologists over the area, so that they can make a visual reconnaissance of the country. And of course when occasion demands the aeroplanes themselves will be used for the ordinary transport of material and personnel.

A GOOD BEGINNING.

Mr. Alan Butler, the Chairman of the Aircraft Operating Company, Ltd., and Major Hemming, deserve not only personal congratulations but public thanks for the work that they have done. The fact that a big City company should have taken the plunge means undoubtedly that others will follow suit.

The directors both of Minerals Separation Ltd. and the Rhodesian Congo Border Concession Ltd. are men of weight in the City and in mining circles. They went into the whole matter in great detail before placing the contract. They made careful examination of aerial photographs and the whole subject was discussed fully between the mining experts of the firms and the Aircraft Operating Company.

Although the present contract is of an experimental nature it assumes that aircraft will become a permanent part of the field equipment of the companies concerned in future. This is indicated by the fact that a big aerodrome is being built



AIR RECONNAISSANCE.—The shaded area shows the ground belonging to the Rhodesian Congo Border Concession Ltd. which is to be surveyed and mapped by the Aircraft Operating Co. Ltd.

at the main base with adequate sheds and workshop equipment. Also landing grounds are to be made at various points all over the concession, so that the survey machines will never be far from a possible alighting place.

Major Cochran-Patrick will command the expedition. The actual photographic work will be in the hands of Mr. W. D. Corse, who worked with Major Hemming in the Bermuda Company and in Newfoundland. He has had wide and long experience of aerial photography in all its branches.

A SOUND POLICY.

The Aircraft Operating Company and its chairman have always looked upon Air Survey as a more immediate commercial proposition than Air Transport. Also they have always thought that it would pay better to go for the big contracts than to take on a number of small jobs, because the success of a big contract is bound to influence the greater commercial interests of the City. And the success of such a contract means that all the past work and expense of the Aircraft Operating Company will be more than justified.

The progress of the firm is worthy of note. Originally it consisted of Mr. Alan Butler, Captain Mills and Major Hemming. Then Mr. R. H. Mayo, O.B.E., M.A., A.M.I.C.E., F.R.Ae.S., was brought in, to establish a consulting branch. And this has been not only successful but very helpful to the Aircraft Industry.

Next the firm bought Aerofilms Ltd., and undertook ordinary aerial photography. The success of that firm was such that after reconstruction it was able to pay a dividend on nine months' work.

Then Colonel Crosthwait joined the firm and began to link up the ancient science of Land Surveying with the new art of Air Survey. Thereafter Major Cochran-Patrick came in as chief Air Survey operator, and quite recently he has become a director of the Aircraft Operating Co. Ltd.

The firm's waiting policy has naturally subjected them to a certain amount of chaff, good natured and otherwise. In fact one official of the Air Ministry described them as an operating company which did not operate. Nevertheless their policy, like most waiting policies when intelligently directed, has paid. And one hopes that this contract will mark the beginning of real commercial success for the firm, as well as of the new era in genuine Commercial Aviation.—

C. G. G.

A SWEDISH APPOINTMENT.

A Reuter message states:—

Colonel Mossberg has been appointed Air Attaché to the Swedish Legation in London. This is the first appointment of this nature to be made in the Swedish diplomatic service.

For a number of years Col. Mossberg has been the Swedish Military Attaché, and during that time he has devoted a great deal of his attention to air affairs. He is well known to and equally well liked by the Air Force authorities and the Aircraft Industry. His great services to British Aircraft Constructors at the time of the famous Gothenburg Exhibition will long be a pleasant memory to all who benefited thereby.

His knowledge of aircraft is both deep and wide. No officer could be better suited to his work. And one hopes that he may continue for many years to be an efficient connecting link, in industry and friendship alike, between our two countries.—C. G. G.

FAIREY AVIATION COMPANY, LIMITED



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

PROPERTY OF THE NATIONAL ARCHIVES

MORE AIR-TROTTING.



"THAT KNUCKLE-END OF ENGLAND" (Sydney Smith).—The De Havilland 51a (Airdisco engine), flown by Colonel the Master of Sempill, seen at John o'Groats, the Northernmost point of Great Britain.

Colonel the Master of Sempill seems to have a fondness for spending his Bank Holidays in the air. Writing as one who has to spend his holidays on the road and suffer as gladly as possible the fool motorist, one envies his ability to do so.

Colonel Sempill's latest achievement is to be the first man to land at John O'Groats, the name commonly given to Duncansby Head. Whether a recent leader in THE AEROPLANE had anything to do with it or not one would not like to say. But at any rate the Royal Aero Club can now learn from him whether John O'Groats is a possible turning point or landing point in a future King's Cup Race. One gathers that as an aerodrome Duncansby Head needs improving.

On July 29, Colonel and Mrs. Sempill left Skeldon House, Ayr, the residence of Air Commodore J. G. Weir, in the D.H. 51a (Airdisco engine) which Air Commodore Weir acquired some time ago. They flew to the home of the Sempill family at Sintray near Aberdeenshire by way of Renfrew and Leuchars.

July 30 and 31 were spent in the task of increasing the air-mindedness of the nation, as Sir Samuel Hoare calls it. In other words, Colonel Sempill gave a number of free gratis joy-rides to the people high and low of the locality, all the way from Colonel Sempill's father, Lord Sempill, down to the Sempill tenantry, first of all at Sintray House and thereafter at the family seat of Craigievar.

On Aug. 1, in spite of its being the Sawbath, Colonel Sempill flew from Aberdeen to John O'Groats, and was thus the first to land on that historic promontory, the northernmost inhabited point of Great Britain.

The route was across Cromarty Firth and Dornoch Firth and the time for the journey was one hour and twenty minutes. Going by rail the journey takes about four hours from Aberdeen to Inverness where one lingers awhile and thereafter takes twelve hours or so for the 160 miles to Wick, wandering round firths and lochs and kyles and spittals and duns and so forth—and then one has quite a long motor-drive to John O'Groats. The return journey the same afternoon took one hour and three-quarters. So in a day Colonel and Mrs. Sempill did a journey which would have taken fully three days to do by train.

Aug. 2, 3, 4, 5 and 6 were all devoted to doing a couple of hours' flying each day in the centre of Scotland, including Aberdeenshire, Kincardineshire and Morayshire. In Kincardineshire the stopping place was Elsick House, belonging to Lord Southesk, where Colonel Sempill took up as passenger Princess Maud, wife of Lord Southesk's eldest son, Lord Carnegie.

On Aug. 7, after landing at Aberdeen for petrol, Colonel and Mrs. Sempill flew to Renfrew and then on to Skeldon House, Ayr, in 1½ hours—a journey which would take the whole of a day if done by rail or even by car.

The tour comprised eighteen hours of flying during which the machine covered about 1,600 miles or so. The petrol consumption worked out in the neighbourhood of 12 to 13 miles per gallon, which would be quite good going for a fairly fast two-seater car.

It is worthy of note that the machine was out in the open the whole time and never landed on an aerodrome except at Leuchars. Which only shows what can be done by a good machine with a good pilot.

THE LIGHT AEROPLANE COMPETITION.

The following is the list of entries for the two-seater Light Aeroplane Competition which is to be held at Lympne from Sept. 10 to 18 inclusive:—

THE BLACKBURN AEROPLANE AND MOTOR CO. LTD.—(1) Blackburn Bluebird, Armstrong-Siddeley Genet.

THE DE HAVILLAND AIRCRAFT CO. LTD.—(2) D.H. Moth, Armstrong-Siddeley Genet.

THE BRISTOL AEROPLANE CO. LTD.—(3) Bristol Brownie, Bristol Cherub.

THE ROYAL AIRCRAFT ESTABLISHMENT AERO CLUB.—(4) Hawker Cygnet, Bristol Cherub. (5) Sirocco, Bristol Cherub.

T. O. M. SOPWITH AND F. SIGRIST.—(6) Hawker Cygnet II, Bristol Cherub.

THE SUPERMARINE AVIATION WORKS LTD.—(7) Supermarine Sparrow II, Bristol Cherub.

THE HALTON AERO CLUB.—(8) Two-seater biplane, Bristol Cherub.

A. V. ROE AND COMPANY LTD., MANCHESTER.—(9) Avro Avian, Armstrong-Siddeley Genet. (10) Avro Avis, Blackburne Thrush or A.B.C. Scorpion.

THE CRANWELL LIGHT AEROPLANE CLUB.—(11) C.L.A. IV, "P" engine. (12) C.L.A. IV, Bristol Cherub.

H. W. MARTIN.—(12) A.N.E.C. Missel-Thrush, Blackburne Thrush.

GEORGE G. PARNALL.—(13) Parnall Pixie III, Bristol Cherub.

THE SEVEN AEROPLANE CLUB.—(15) Short Satellite, A.B.C. Scorpion. (16) Westland Woodpigeon, A.B.C. Scorpion.

SUPPLEMENTARY REGULATIONS.

(1) All tanks, filler caps, and carburettor float chamber covers must be provided with lugs or some other efficient means of facilitating sealing.

(2) In case of a landing away from Lympne Aerodrome, a full report of the circumstances must be made in writing to the Chief Marshal on the return of the aircraft to Lympne.

Fuel (See Supplementary Regulations I, No. 6). This Rule was specifically framed in order to prevent the admixture of chemical dopes with ordinary petrol or mixtures of petrol and benzol. The Rule was issued on Apr. 20, 1926, and has governed the preparation of engines and their accessories. In fairness to all competitors, therefore, the use of chemical dopes is still disallowed, even though in some cases supplies may have been increased.

Load to be Carried (See Regulation 7). Competitors must provide



IN THE CROCKETT COUNTRY.—The D.H. 51a at Skeldon House, Ayr, the residence of its owner, Air Commodore J. G. Weir.




AEROPLANES AND AERO ENGINES.

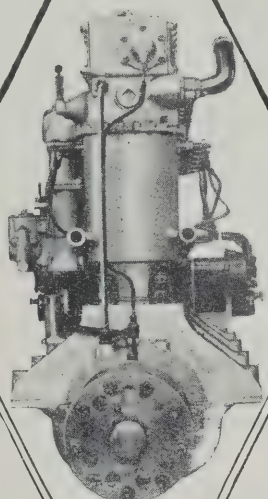


WE HAVE A COMPETENT
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WELL-EQUIPPED FACTORY,
BOTH OF WHICH ENSURE
FIRST-CLASS WORK BEING
CARRIED OUT TO OUR
CLIENTS' REQUIREMENTS.


EVERY ENGINE BEFORE
DESPATCH IS DISMANTLED
FOR INSPECTION AND AFTER
RE-ASSEMBLY IS TESTED
UNDER SUPERVISION OF
OUR QUALIFIED AND AP-
PROVED INSPECTION STAFF.



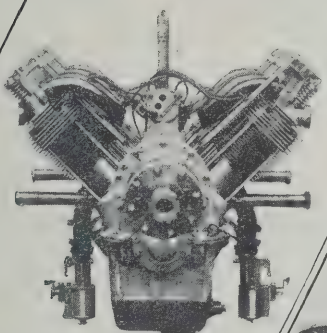
"AIRDISCO"
Avro type
504K.



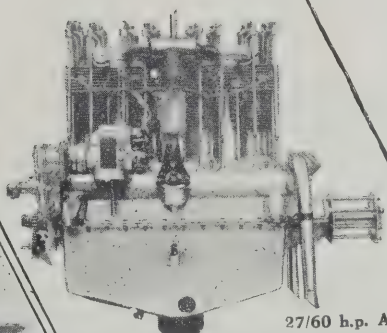
300-330 h.-
A.D.C.
'Nimbus'




MARTINSYDE
A.D.C. 1.



120/140 h.p. A.D.C.
'AIRDISCO.'



27/60 h.p. A.D.C.
'CIRRUS.'



D.H.9 Scaplane.

MACHINES.

BRISTOL FIGHTER.
D.H.9,
MARTINSYDE F.4.
SNIPE, SE5A, etc., etc.

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MACHINES and
ENGINES available.

ENGINES.

360 h.p. "EAGLE VIII."
240 h.p. "PUMA."
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Telephone: Regent 6240. Cables: "Airdisco, London."

their own ballast which must be of such a nature as not to vary in weight, and which is capable of being easily weighed.

Identification (See Regulation 11). The Official Number must be painted in black on a white surface on each side of the fuselage and on the lower surface of each of the lower planes. This number must be as large as the surface permits. Government Registration Marks are not necessary for this Competition.

FOR LYMPNE.

The manufacturers of the A.N.E.C.IV, entered for the Lympne Competition, wish to make it clear that it is an entirely new model biplane, and have decided to call it the A.N.E.C. "Missel-Thrush," which brings in the name of the engine fitted.

THE A.B.C. SCORPION MARK II.

The A.B.C. Scorpion Mark II aero-engine, which has been designed to comply with the regulations of this year's Light Aeroplane Competition, has recently successfully passed the Air Ministry type tests at the rated output of 34 b.h.p., 2,300 r.p.m. Over the whole test, petrol and oil consumption averaged .522 pints of petrol and .039 pints of oil per b.h.p. hour. At the end of the test the engine was in excellent condition.

The Scorpion Mark II, although based upon the original Scorpion, which was in turn a slightly modified version of the well-known A.B.C. car engine, has been redesigned throughout for use on light aircraft, and except in general arrangement, differs considerably from its progenitors.

It is of the two-cylinder, horizontally-opposed type, with steel cylinders having detachable cast-iron heads. The combustion space is hemispherical, and has two inclined valves, with provision for two symmetrically-disposed sparking plugs. The crankshaft is short and stiff, the two throws being kept close together, and is made in one piece. The big ends are solid and large enough to thread in over the crankshaft, and are fitted with split internal bushes.

The crankcase is of roughly cylindrical form, with the front cover and bearing carrier cast integral. There is thus only one joint—that of the rear cover.

SPECIFICATION.

| | | | |
|-----------------------|--------------|---------------------|--------------|
| Bore | 4.015 inches | Normal output | 34 b.h.p. |
| | (102 m/m.) | | 2,300 r.p.m. |
| Stroke | 3.6 inches | Maximum output ... | 39 b.h.p. |
| | (78 m/m.) | | 2,530 r.p.m. |
| Cylinder capacity ... | 1,500 c.c. | Weight | 106 lbs. |

THE GERMAN GLIDING COMPETITION.

The annual Rhön Gliding meeting was held at the Wasserküppe between July 25 and Aug. 16, and attracted an entry list of 53 pure gliders.

Several remarkable results were achieved, and, though the enthusiasts who regard gliders as a means of conveyance may be disappointed, the meeting certainly demonstrated the keenness of the young Germans who cannot afford motor-driven aircraft.

The main prize of 3,000 marks, offered by the Prussian Ministry of Commerce for the longest glide, was won by Herr Max Kegel, Chief of the Air Section of the Cassel Police, who in a glider of his own design made a flight of 34 miles in a straight line. This glide beats the previous best glide made by Herr Nehring, of Darmstadt, who flew 15 miles at the Crimean gliding meeting in October last year.

Herr Nehring this year won the 2,000 marks Milseburg Prize for accomplishing a round glide from the Wasserküppe to Milseburg, $3\frac{1}{2}$ miles away, and back, in 31 mins., without losing height.

Herr Nehring also won one of the smaller prizes for a glide with a passenger, and made other glides of 59 mins., 19 mins. 36 secs., 18 mins. 58 secs., and 14 mins. 25 secs. During the course of the last three flights he reached heights of 75, 55, and 83 m. above his starting points.



THE REDUCTION OF PRICE OF THE D.H. MOTH.

As is announced officially elsewhere in this journal the De Havilland Aircraft Co. Ltd. have reduced the price of the D.H. Moth to £795. The new price represents a reduction of over £100 on the original model, which, with dual ignition (now fitted as standard), was priced at £902.15s.

To all those who are clamouring for a £400, or less, aeroplane to do in the air all that the Ford does on the ground this will still leave room for clamour. However, the fact that the constructors have been able to effect over a 10 per cent price reduction so early in the history of post-war aviation, is exceedingly interesting.

Last week one wrote of the Moth Service Station of the future, and said incidentally that this is not so very far off as many people might imagine. At the same time it was shown by the flight of Sir John Rhodes, that a Moth could make a tour of nearly 800 miles in four days at a cost of 2.48 pence per mile.

News concerning the D.H. Moth grows more and more like the announcements issued by automobile manufacturers and if only the De Havilland Company could hope to attract one per cent. of the demand there is for certain of the higher-class automobiles the real meaning of the present price reduction would be better understood.

The De Havilland Company are to be congratulated on their bold move, and one sincerely hopes that the future will amply repay them.—L. B.

THE CIRCUIT OF CZECHO-SLOVAKIA.

The annual race round the Czecho-Slovak Republic, organised by the Czecho-Slovak Aero Club, was held on July 5, over the circuit Prague—Hradec Kralove—Opava—Mor. Ostrava—Olomouc—Nitra—Bratislava—Brno—C. Budejovice—Plzen—Prague, a total distance of 1,100 kms., with obligatory landings at Olomouc and Brno.

Competing aircraft were divided into three categories and had to be standard production aircraft as used by the Army Air Service.

Extremely bad weather, including high wind and torrential rain, over one sector, which forced five competitors to land, and a thick fog on another portion of the circuit, compelling pilots to fly very low, did little to interfere with the success of the competition.

Category A for aircraft under 100 h.p. was won by Capt. A. Vlcek on an Avia B.H.9 monoplane (60 h.p. Walter engine), who completed the circuit in 7 hours 56 mins. flying time. The three remaining competitors in this category did not complete the course.

Category B was won by Sergt. O. Subrt on an Aero 11 two-seater reconnaissance biplane (240 h.p. Walter engine), in 6 hours 5 mins. flying time, followed by Sergt. Novak, 6 hours 34 mins.; Capt. Schindler, 6 hours 44 mins.; and Sergt. Nemec, 6 hours 53 mins., all on Aero 11 biplanes (240 h.p. Walter engines).

Category C for single-seat fighters, was won by Sergt. J. Anderle, on a Smolik 20 biplane (300 h.p. Skoda-Hispano-Suiza engine), in 5 hours 7 mins., followed by Capt. Zeleny on the same type of machine in 5 hours 11 mins.

In connection with this race, a flying day was held at Kbely aerodrome, Prague, and over 50 military aircraft carried out exhibitions of formation flying, etc. In addition M. Bican, chief pilot of Milos Bondy and Co., demonstrated the flying qualities of the Avia B.H.11 monoplane with some wonderful exhibitions of aerobatics, and large numbers of people were given flights on machines belonging to the various civil aviation companies.

On the following day, in connection with the Sokol Fête, 80 military aircraft flew over the Stadium of Prague.

A ROYAL PASSENGER.—The Princess Maud in the D.H.51a, at Elsieck House, the seat of the Earl of Southesk, where she flew with Colonel the Master of Sempill.

Princess Maud is the wife of Lord Carnegie (here seen beside her) and the second daughter of the late Duke of Fife and of the Princess Louise, eldest sister of His Majesty King George. Her elder sister is the Princess Arthur of Connaught, who is Duchess of Fife in her own right.

Colonel Sempill, whose August Tour is described on the previous page, is doing very valuable work in promoting air-mindedness in Great Britain.



VICKERS AIRCRAFT *Limited*

Accessories and Armament
of all descriptions.

TWO EXAMPLES OF ROYAL AIR FORCE TYPES.

AIRCRAFT

- AMBULANCES.
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VICKERS "VIRGINIA"

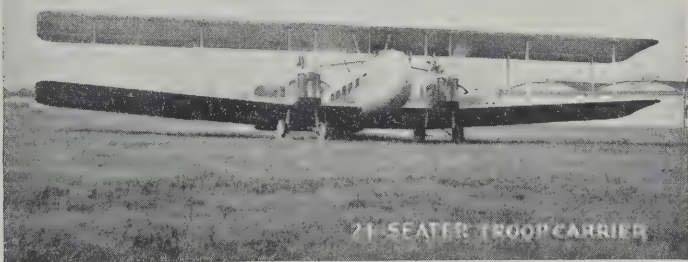
(TWIN 450 H.P. NAPIER "LION" ENGINES)
(Home Squadrons Equipment)



Length Overall...50'-7" Span (Spread)...86'-6" Unladen Weight...9,900 lbs.
Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...6,850 lbs.
Approx. Full Speed...108 m.p.h. Minimum Speed...46 m.p.h.

VICKERS "VICTORIA"

(TWIN 450 H.P. NAPIER "LION" ENGINES)
(on service in Iraq).



Length Overall...51'-7" Span (Spread)...86'-6" Unladen Weight...10,155 lbs.
Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...7,945 lbs.
Approx. Full Speed...104 m.p.h. Minimum Speed...48 m.p.h.

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- AMMUNITION.
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

Aug. 10.

GENERAL DUTIES BRANCH.—The following are granted temp. comms. as Flg. Offs. on seconding for four years' duty with the R.A.F. (July 26):—J. N. Berkeley-Miller (Lt., R. Tank Corps); C. H. Schofield (Lt., Welch R.).

The following Plt. Offs. are promoted to the rank of Flg. Off.:—C. H. Loughman (May 1); J. W. Vanderbeeck (June 15); G. B. Beardsworth (June 17); N. S. Allison (June 17).

The following Flg. Offs. are placed on the retired list at their own request:—G. H. Elliot (Aug. 8); A. E. Platford (Aug. 12). Flg. Off. J. P. Cafferkey is placed on the retired list on account of ill-health (Aug. 11); Flg. Off. S. S. Girsten is transferred to the Reserve, Class A (July 27); the S.S. comn. of Plt. Off. on probation T. J. L. Bradley is terminated on cessation of duty (July 23).

STORES BRANCH.—Sq. Ldr. D. McBirney is placed on the retired list (Aug. 8); Flt. Lt. G. C. Anne, O.B.E., is placed on the retired list at his own request and is granted permission to retain the rank of Sq. Ldr. (Aug. 11); Sq. Ldr. H. E. J. Hewitt relinquishes his S.S. comn. on account of ill-health and is granted permission to retain his rank (Aug. 11).

ACCOUNTANT BRANCH.—The following are granted perm. comms. as Plt. Offs. on probation, with effect from and with seniority of Aug. 3:—R. A. J. Mullarkey, A. W. Younghusband.

MEDICAL BRANCH.—Flg. Off. R. S. MacLachy is transferred to the Reserve, Class D.2 (Aug. 11).

RESERVE OF AIR FORCE OFFICERS.—Flg. Off. D. M. I. Macarthur is removed from the service (July 26).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Staff Nurse Miss M. T. Thorburn is promoted to the rank of Sister (Aug. 14).

Appointments.

Week ending Aug. 16.

GENERAL DUTIES BRANCH.—Wing Commanders E. R. C. Nanson, D.S.C., A.F.C., to R.A.F. Depot, pending posting overseas, 13/8. C. W. H. Pulford, O.B.E., A.F.C., to R.A.F. Depot, pending disposal, 12/7. W. H. Primrose, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 12/8.

Squadron Leaders A. P. V. Daly, to No. 58 Sqn., Worthy Down, 3/8. K. R. Park, M.C., D.F.C., to H.Q., Air Defence of Great Britain, Uxbridge, 15/8. J. W. Woodhouse, D.S.O., M.C., to M.A.E.E., Felixstowe, 6/8.

Flight Lieutenants C. E. W. Lockyer, to School of Photography, Farnborough, 17/8. R. W. Edwards, to Home Aircraft Depot, Henlow, 16/8. A. W. Franklyn, M.C., to Armament and Gunnery School, Eastchurch, 16/8. R. S. P. Boby, to R.A.F. Depot, on transfer to Home Estab., 25/7. P. H. Davy, to R.A.F. Depot, on transfer to Home Estab., 17/7. O. W. de Putron, to No. 99 Sqn., Bircham Newton, 12/8. N. M. S. Russell, to No. 84 Sqn., Iraq, 17/7.

Flying Officers J. S. Nichol, to No. 39 Sqn., Spittlegate, 23/8. E. A. Blake, M.M., to No. 5 F.T.S., Sealand, 18/8. A. M. Webster, to R.A.F. Depot, on transfer to Home Estab., 27/7. C. F. H. Grace, to Communication Flight, Northolt, 19/7. (Hon. Flt. Lt.) E. V. Major, to No. 2 F.T.S., Digby, 18/8. E. R. Newbigging, to R.A.F. Depot, on transfer to Home Estab., 5/8. C. Sutton, to Heliopolis Details, 30/7. W. H. Burbury, to No. 5 Sqn., India, 7/7. J. N. Berkeley-Miller and C. H. Schofield, to No. 4 F.T.S., Egypt, on appointment to Temp. Comms. from the Army, 26/7. F. A. Swaffer, M.B.E., to No. 11 Sqn., Netheravon, 17/8. J. B. Barrett and F. G. Cator, to School of Photography, Farnborough, 9/8. M. J. Ducray, to No. 1 F.T.S., Netheravon, 14/8. C. Guppy, to R.A.F. Base, Calshot, 17/7. G. H. Vasse, G. Combe and E. S. C. Vaughan, M.C., to Armament and Gunnery School, Eastchurch, 16/8. C. E. C. Penny, to R.A.F. Depot, Uxbridge, 18/8. F. F. Wilkinson, to No. 23 Sqn., Henlow, 26/7. R. H. S. Mealing, to Heliopolis Details, 8/7. H. E. Power, to No. 208 Sqn., Egypt, on appointment to a S.S. Comn., 24/7.

Pilot Officers W. G. Cheshire, to No. 4 F.T.S., Egypt, on appointment to S.S. Comn., 28/7. G. M. E. Shaw, to No. 45 Sqn., Iraq, 28/4. D. C. Sherman, to No. 31 Sqn., India, 19/7. G. P. Butcher, to Aircraft Depot, India, 7/7. W. S. Townsend, to No. 27 Sqn., India, 7/7. R. C. Whitle, to Aircraft Depot, India, 7/7. The undermentioned Pilot Officers are posted on appointment to Perm. Comms. from the R.A.F. Cadet College, with effect 30/7:—W. L. Freebody and F. J. Moon, to No. 11 Sqn., Netheravon. R. K. Hamblin, to No. 56 Sqn., Biggin Hill. K. S. Brake and L. C. Bennett, to No. 43 Sqn., Henlow. E. S. Finch and B. C. Yarde, to No. 3 Sqn., Upavon. H. Waring, W. G. Abrams, C. E. Chilton and R. S. Darbishire, to R.A.F. Base, Calshot. J. C. Cunningham, to No. 4 Sqn., Farnborough. R. F. Part, to No. 502 Ulster Sqn., Aldergrove. H. H. Martin, to No. 2 Sqn., Manston. G. Stevenson and R. P. H. Utley, to No. 58 Sqn., Worthy Down. P. H. Jackson and H. A. Purvis, to No. 111 Sqn., Duxford. D. N. Roberts, to No. 39 Sqn., Spittlegate.

MEDICAL BRANCH.—Wing Commander W. Tyrrell, D.S.O., M.C., M.B., D.P.H., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 23/7. Flying Officers L. Freeman, to R.A.F. Depot, Uxbridge, 5/8. J. O. Priestley, D.M.R.E., to R.A.F. Depot, Uxbridge, 9/8. J. Twohill, M.B., to M.A.E.E., Felixstowe, 9/8.

STORES BRANCH.—Flying Officer A. Davidson, M.C., to Supply Services, Supply Depot, Mosul, 11/3.

ACCOUNTANT BRANCH.—Pilot Officers R. A. J. Mullarkey and A. W. Younghusband, to School of Store Accounting and Storekeeping, Kidbrooke, on appointment to Perm. Comms. (on probation), 3/8.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Helwan, Egypt, to a D.H.9a of No. 47 Squadron, Helwan, on August 10, Flg. Off. Herbert Gerald Slater, the pilot of the aircraft, and No. 342173 AC.1. Thomas Reginald Harvey, were killed.

The Air Ministry regrets to announce that as the result of an accident in the vicinity of Netheravon Aerodrome to a D.H.9a of No. 1 Flying Training School, Netheravon, on

Aug. 12, No. 335937 L-AC. Clarence Henry Hooper Gooding the pilot and sole occupant of the aircraft, was severely injured, and died of his injuries shortly afterwards.

Cranwell Cadetships.

The following are declared by the Civil Service Commissioners to be the successful candidates at the competition held last June for admission to the Royal Air Force Cadet College, Cranwell. Their admission is conditional on their having passed a medical examination.

The names are in order of merit, and a table of marks will be sent to each candidate as soon as possible:—

Easton, J. A., Frost, A. H. E., Taylor, L. V., Dale, H. R., Grundy, E. M. F., Wells, W. J. M., Dark, A. E., Pratt, C. V. J., Tindal-Cavill, Worsley, G. N. E., Cooper, R. J., Homer, J. W., Pringle, H. J., Williams, G. N. E., Bayne, D. W., Stratton, J. A. C., White, N. E., Ferguson, J. H. P., Aldrich-Blake, P. G., Martin, E. L., Council, R. B., Pocock, N. E. I., Laine, E. J., Manning-Fox, J. H., Jorgensen, J. E., Younghusband, R. H., Savage, J. W.

King's Cadets who have qualified:—Ryley, C., Sprague, R. A.

No. 4 Apprentices' Wing.

No. 4 Apprentices' Wing, R.A.F., was formed at Cranwell in 1920, under the command of the late Group Captain C. F. Kilter, D.S.O., R.A.F., and was then designated No. 2 School of Technical Training (Boys).

In April, 1921, the Unit became the Boys' Wing, Cranwell, and in August, 1922, the Command was taken over by Wing Cdr. R. J. F. Barton, D.B.E.

In November, 1925, the Unit became No. 4 Apprentices' Wing, and will retain this designation on joining the Halton establishment.

The Wing has every reason to be proud of its achievements during the past six years. According to the final issue of *No. 4 Apprentices' Wing Magazine*, the Unit has produced eighteen cadets, over sixty corporals, and some six hundred who were leading aircraftmen on leaving. A large number of these have already been promoted to corporals and sergeants, and there have also been a number of N.C.O. pilots from its ranks.

Many ex-boys are studying under the Institution of Mechanical Engineers and Automobile Engineers, and some are working under the A.I.D.

The Rifle Championship of the R.A.F. was won recently by an ex-boy from Cranwell, and many others represent their Units and the Service in the world of sport.

The Wing's Light Aeroplane Club has contributed to the design of small aeroplanes, and has also designed a small aero-engine.

A scale model of a Bristol fighter made by a member of the Apprentices' Wing Model Aircraft Society has been placed in the South Kensington Museum.

Competitive Permanent Commissions.

An Air Ministry communiqué, dated Aug. 13, announces that further appointments to Short Service Commissions in the R.A.F. will be made in September.

The communiqué again impresses on candidates that only a very small percentage of short service officers can be retained on the Permanent List. On the other hand the Air Ministry now calls attention to the fact that every year a competitive examination is held in mathematical and scientific subjects and is open to officers of two years' service who are under 25 years of age. Officers who pass this examination proceed to a two-years' course in engineering and are granted permanent commissions.

After five years' satisfactory service in the R.A.F. the short service officer should find himself qualified to obtain employment in engineering and allied firms. Service in the R.A.F. counts in part towards the period necessary to become an Associate Member of the Institute of Mechanical Engineers, and an officer should be able to pass the Associate Membership Examination of that Institution before he leaves the Service.

Candidates for Short Service Commissions in the R.A.F. should be between 18 and 25 years of age and those with a basis of engineering training are particularly wanted.

Application for forms and regulations should be made without delay to the Secretary, Air Ministry, Kingsway, W.C.2.

The Fleet Air Arm.

The *Times* of Aug. 13 states:—

The aircraft-carrier *Eagle*, Capt. W. M. Kerr, C.B.E., is to return to Devonport for recommissioning at the end of September. Her present crew joined her at Portsmouth on Feb. 26, 1924. The *Eagle* is one of two aircraft-carriers now maintained in the Mediterranean, the other being the *Hermes*, which is manned from Chatham.

Some Service Magazines.

The *Basrah R.A.F. Magazine*:—The Summer Number of the *Basrah R.A.F. Magazine* is as well illustrated as the previous issues, a photograph of Baghdad is particularly striking.

The magazine would be very much more convenient to read

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if it were arranged somewhat differently. For instance, sports news should be kept together instead of being scattered indiscriminately through the paper, and definite news, like "Items from India," might be grouped apart from the mere local libels and odd editorial notes and comments. The Magazine is full of interesting material and excellent drawings, but it wants bracing up.

The Overseas Airman:—The August number appears in another new jacket, and looks very smart and prosperous. It is as full as ever of cheerful nonsense, the best being, perhaps, a page of stories, profane and otherwise, told by an Education Officer in the Palestine Command. The poem "The Air Mail" might be quite good if a few words were altered here and there to correct the scansion. The drawing of "The Man Who Dropped It" (after Bateman) is good.

No. 4 Apprentices' Wing Magazine:—Unfortunately this is the last number of this excellent magazine. It should have a tremendous sale amongst the Apprentices and ex-Apprentices who served with the Wing at Cranwell, because it is a record of the activities of the Wing since its formation, and is beautifully illustrated with photographs of the Station and its surroundings, the workshops, and other familiar buildings, and groups of the various Wing Sports teams.—C. M. MCA.

R.A.F. SPORTS.

The R.A.F. Swimming Association.

The eliminating swimming contest between No. 5 F.T.S., Sealand, and M.T.D., Shrewsbury, took place at Shrewsbury Baths, early in August. The results were:—

50 Yards Championship.—(1) AC. Belcher, B. (Shrewsbury). (Time 34 4/5ths). (2) Cpl. Hill (Sealand).

100 Yards Championship.—(1) Cpl. Hill (Sealand). (Time 79 2/5ths). (2) AC. Belcher, B. (Shrewsbury).

Diving.—(1) L-AC. Bown (Shrewsbury). (2) Cpl. Hill (Sealand).

Plunging.—(1) AC. Evans (Shrewsbury). (39 ft. 9 ins.). (2) Flg. Off. Whitehead (Shrewsbury).

Inter-Unit Relay Race (one length each man).—Won by Shrewsbury Team. This was first a dead-heat, but in the swim-off Shrewsbury won by two yards.

Inter-Unit Water Polo.—Won by Shrewsbury, 8—0. Sealand were unfortunate in having to play without their captain and two others of the usual team, who were away on account of illness.

The R.A.F. Rifle Association.

The Sixth Annual Meeting of the R.A.F. Rifle Association was held at Bisley from June 28 to July 2.

The number of entries for this meeting shows a great improvement on previous years, 161 competing in the Tyros Match alone, this year, against 31 last year. In the Aperture Sight Match there were 48 competitors this year against none last year.

At the end of the Meeting the prizes were presented by Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., who, in the course of a few remarks at the end of the prize-giving said that rifle-shooting was the A.B.C. of all other forms of shooting and he was very pleased to see that so many officers and airmen had taken it up. He also alluded to the excellent score made by L-AC. Willott, in the Rifle Championship, and Young Airman's Match, and said that the equivalent to this score had won the Army Championship two years ago.

The winners of the first prizes were:—

THE TYRO MATCH.—(The Longcroft Cup): L-AC. Pyne (Felixstowe). **THE YOUNG OFFICERS' AND AIRMEN'S MATCH.**—(The Whitelock Challenge Cup): L-AC. Willott (Eastchurch).

THE RIFLE CHAMPIONSHIP AND GRAND AGGREGATE.—(H.G. the Duke of Sutherland's Challenge Cup, the N.R.A. Silver Medal and the R.A.F. R.A. Silver Medal): L-AC. Willott (Eastchurch). **Match I of above Deliberate:** Flg. Off. Delamain (Cranwell). **Match II of above 600 x to 100 x fire with movement:** F-S. Brockeman (Cranwell). **Match III of above Rapid 300 x:** Sjt. Scott (Flowerdown). **Match IV of above, Snapshooting 300 x:** AC. Cranstone (Cranwell).

THE APERTURE SIGHT MATCH.—(The J. C. Halahan Cup and the R.A.F. R.A. Silver Medal): F-S. Williams (Cranwell).

THE PISTOL CHAMPIONSHIP.—(The F. C. Halahan Cup): Sq. Ldr. Darley (Halton).

THE REVOLVER CHAMPIONSHIP.—(The Barton Cup): Sq. Ldr. Darley (Halton).

TEAM EVENTS.

THE CHIEF OF THE AIR STAFF'S INTER-UNIT CHALLENGE CUP.—(The Cup and R.A.F. R.A. Silver and Bronze Medals): 1st, Cranwell, score 1,141; 2nd, Eastchurch, score 1,103; 3rd, Manston, score 1,068.

THE INTER-UNIT PISTOL TEAM MATCH.—(The Salmond Cup) (1 R.A.F. R.A. Silver and 4 Bronze Medals): 1st, Cranwell (378); 2nd, Halton (337); 3rd, Eastchurch (206).

AN ALTITUDE DURATION RECORD.

A writer in the *Westgate-on-Sea and Birchington Guardian*, describing searchlight practice in the neighbourhood, writes as follows:—

The crew work in darkness until, suddenly, the order is given, a hiss follows in the great lamp, and a beam is shot right on to the aeroplane, perhaps a big twin-engined bombing machine; it is many miles away, too.

It started out long before dusk to attain the necessary height . . .

Even allowing that the article is somewhat of the *coloratura* type, the writer must have got some facts from somewhere. And he cannot well have invented the idea that our big bombers have to start out *long before dusk* to get to a reasonable height for searchlight practice *after dark*.

THE BOURNEMOUTH MEETING.

An account of the Bournemouth Flying Meeting on Saturday and Sunday next will be published in *THE AEROPLANE* next week. Whether it will occupy much space or little will depend entirely on what happens at the meeting. In these days there is so much news of international and national importance to be published that there is no space to spare for descriptions at length of flying races between machines and pilots, all of which and whom are so well known that they need no describing to readers of this paper.

At the same time, Bournemouth is the first provincial town to put up money for an air-race meeting since the War 1914-18—for of course one does not include the "Pageants" organised by the Lancashire and Yorkshire Clubs among provincial race-meetings—so a certain amount of space must be devoted to the actual results of its sporting effort.

Also the Royal Aero Club is to be congratulated on having the courage to defy the Non-Conformist Conscience and give its blessing and aid to Sunday racing. The only thing to which one objects is having the affair made a two-day meeting. It takes up so much time, and, to those on the inside of Aviation, it may be as boring as a cricket Test Match. Still, it will be interesting to see whether the indigenous inhabitants of Bournemouth, and the visitors on whom they live, patronise the meeting more on Sunday than on the Saturday, or contrariwise, or whether they go at all.—C. G. G.

ENTRANTS.

The entries for the Bournemouth Meeting are given below. First appears the name of the pilot, then the entrant when entered by other than the pilot, then the description of the machine, followed by its colouring and official letters:—

W. J. McDonough, Midland Aero Club, D.H. Moth (27/60 h.p. Cirrus). Green and Silver, G-EBLT.

F. G. Sparks, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus). Brown and Silver, G-EBLI.

S. L. F. St. Barbe, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus). Brown and Silver, G-EBNY.

G. I. Thomson, Hampshire Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus). Light and Dark Blue and Silver, G-EBOH.

A. S. Butler (Royal Aero Club), D.H.37 (300 h.p. Nimbus), Red and Silver, G-EBDO.

C. D. Barnard (Royal Aero Club), S.E.C.M. (Hispano-Suiza), White Blue Stripes, F-AIAQ.

Mrs. S. C. Elliott-Lynn (British Private Aircraft Owners' Club), D.H. Moth (27/60 h.p. Cirrus), Light Blue, G-EBKT.

Flt. Lt. J. S. Chick, R.A.E. Aero Club, R.A.E. Hurricane (30 h.p. Bristol Cherub), Silver, G-EBHS.

Flt. Lt. F. H. Shales, R.A.E. Aero Club, Hawker Cygnet (30 h.p. Bristol Cherub), Silver and Buff, G-EBJH.

D. A. N. Watt (British Private Aircraft Owners' Club), Sopwith Grasshopper (100 h.p. Anzani), Kharki, G-EAIN.

D. A. N. Watt (British Private Aircraft Owners' Club), Sopwith Swallow (130 h.p. Clerget), Silver, G-EACZ.

Capt. G. de Havilland (British Private Aircraft Owners' Club), D.H. Moth (27/60 h.p. Cirrus Mark II), Peacock Blue and Silver, G-EBNO.

Flg. Off. G. E. F. Boyes, The Seven Aeroplane Club, D.H.53 (A.B.C. Scorpion), Silver, G-EHBZ.

W. Hay, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus). Brown and Silver, G-EBMF.

Capt. A. Lamplugh, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus), Brown and Silver, G-EBNP.

Flt. Lt. A. Bamber, Mrs. S. C. Elliott-Lynn, S.E.5 (210 h.p. Viper) Silver, G-EBPA.

Flg. Off. R. H. Stocken, Hampshire Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus), Light and Dark Blue and Silver, G-EBOH.

Wing Cdr W. Sholto Douglas, Nimbus Martinsyde (300 h.p. Nimbus) Silver, G-EBQJ.

B. Hinkler, A. V. Roe and Co. Ltd., Avro Gosport (100 h.p. Mono) Silver, G-EBNE.

H. S. Broad, F. E. N. St. Barbe, D.H. Moth (27/60 h.p. Cirrus) White and Crimson, G-EBMO.

W. L. Hope, D.H. Moth (27/60 h.p. Cirrus), Dark Blue and Silver G-EBME.

E. L. Brighton, Midland Aero Club, D.H. Moth (27/60 h.p. Cirrus) Green and Silver, G-EBLT.

Major K. M. Beaumont, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus), Brown and Silver, G-EBNY.

L. J. C. Mitchell, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus), Brown and Silver, G-EBLI.

R. Malcolm, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus) Brown and Silver, G-EBMF.

G. H. Craig, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus) Brown and Silver, G-EBNP.

N. Jones, London Aeroplane Club, D.H. Moth (27/60 h.p. Cirrus) Brown and Silver, G-EBLI.

THE GROSVENOR CHALLENGE CUP HANDICAP.

The Race for the Grosvenor Challenge Cup and for prizes presented by Sir Charles Wakefield, Bart.,—First Prize £75, Second Prize £25—will be held at Lympne on Saturday, Sept. 18, over a distance of approximately 100 miles.

The Race is open to any aeroplane, the weight of the engine of which does not exceed 275 lbs. The aeroplane and engine must have been entirely constructed in the British Empire, and the entrant and pilot must be British subjects. The entrant must be an individual and not a company. The aeroplanes will be handicapped on a time allowance basis.

The entry fee is £2. This fee, together with entry form, must be received by the Royal Aero Club, 3, Clifford Street, London, W.1. not later than Friday, Sept. 3.

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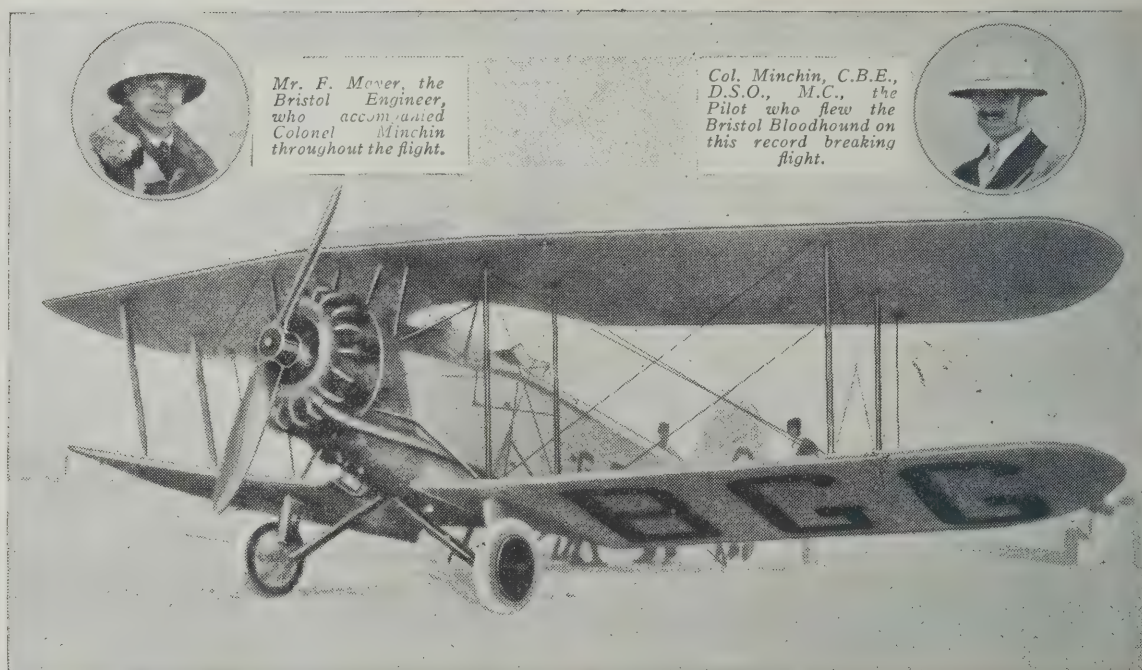
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The pilot, Colonel Minchin, C.B.E., D.S.O., M.C., flying a Bristol Bloodhound Biplane with Bristol Jupiter air-cooled engine, set up this new air record on July 30th/31st.

The distance of this air route is 2,200 miles, of which 400 are over the sea. It was an arduous task for any engine. Shell Oil was used exclusively and gave dependable, unfaltering lubrication throughout the flight.

Shell Aviation Spirit was also used exclusively. Thus another air record was made on that invincible combination—Shell Oil and Shell Petrol.

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THE BRISTOL HIGH-SPEED FLIGHT TO CAIRO.

By F. MAYER.



THE SHIP AND HER CREW.—The Bristol Bloodhound (Bristol Jupiter engine) with Lt.-Col. Minchin, C.B.E., D.S.O., M.C. (late R.F.C. and R.A.F.), and Mr. F. Mayer of the Bristol Aeroplane Co. Ltd., before the start for Cairo.

Some months ago a Bristol Bloodhound biplane, with a Mark VI Bristol Jupiter engine, did an endurance flight of 5,000 miles in 225 hours, under official supervision, during which not a single replacement or adjustment was made to the sealed engine. With only one valve and spring replaced the engine was refitted in the machine and again sealed.

Arrangements were made with Lt.-Col. F. F. Minchin, C.B.E., D.S.O., M.C., late R.F.C. and R.A.F., and now a pilot of Imperial Airways Ltd., to attempt to make the flight from Croydon to Cairo in two days, this journey never having been one in the time. Delays at two of the landing points prevented the journey from being done to schedule, but the speed for time was exceeded by 2½ hours only.

Col. Minchin was accompanied by Mr. F. Mayer, who has contributed the following interesting record of the flight:—

It was on the morning of June 30 that we set out from Croydon. In the darkness we made our preparations and dawn was just rising when we took off at 04.00 hrs. Apparently it was well that we did not delay our departure because I have since been informed that had we left the aerodrome before a thick ground mist fell which would have rendered a take-off impossible. As a matter of fact during the trip from Croydon to the coast the ground mist and the darkness of early dawn prevented our seeing anything whatever of the country over which we were flying.

We made a fairly long crossing over the sea but soon after we hit the French coast the sun came out brightly and the weather appeared to promise well for the earlier stages of our trip.

At 08.00 hrs. we landed on the aerodrome at Dijon. Here the first of our many troubles started, and, considering our desire to lose as little time as possible in order to make a speedy flight, it was irritating enough.

Sure enough a wagon with 50 gallon drums of petrol and oil was waiting; but there was no means of getting the petrol into the tanks, which are on the top wing of the machine, and quite a time was lost searching for cans and funnels. At last Colonel Minchin and myself—gallantly aided by the agent of the Petrol Company—succeeded in getting about 100 gallons of petrol into the tanks.

In the meantime, having had some previous experience of Customs delays, we had telephoned to the Customs Officer at Dijon, about 5 miles distant. He informed us that he would start immediately for the aerodrome. The minutes steadily passed and when at the end of an hour and a half he had still not appeared our patience began to get a little frayed.

However, when he eventually arrived, having made the journey on a bicycle, we were compelled to refrain from complaining for the officer was a cripple who had lost a leg in the war. Once upon the spot he afforded us the quickest possible clearance and we were on our way upon the second section of our journey.

When we left Croydon the temperature was 80°C; at Dijon already the shade temperature on the ground had mounted to 26° C.

OVER THE ALPS

The first half-hour on this section of our journey was over moderately good country. However, this soon changed to hills and some very ugly looking mountain ranges, so that it was well for our peace of mind that we had absolute faith in our engine. As we

approached this mountainous country we had been gradually climbing until we were flying at a height of 10,000 feet and at this altitude we were able to fly along the valleys beneath the towering Alpine peaks.

During our passage of the Alps it was amazing the way the weather alternated, for local storms of great violence extending over comparatively small areas were frequently met. For instance two of the valleys which we traversed were almost completely impassable owing to violent storms, and the severe bumps which we experienced were more than unpleasant.

At the same time the passage from these storm areas into better weather conditions was extremely rapid. One moment one would be thrown about by air bumps and a minute afterwards we would be dashing along quite pleasantly through comparatively still air.

For a considerable part of our journey through the Alps the scenery was magnificent. Flying at about 12,000 feet, on either side there towered snow-clad mountain peaks, and, wherever one looked in any direction, chains of rugged mountains stretched away into the distance, white-tipped and gradually merging from white to grey and grey to black as the altitudes decreased. The scene was grand and impressive but still one could not get away from the fixed idea at the back of one's brain that it was only a knowledge of the reliability of our engine and aircraft which rendered an artistic appreciation of the panorama possible.

We had started before dawn so that we had had very little in the way of a night's rest before departure. Flying along at this high altitude for some hours made both Colonel Minchin and myself very drowsy. In my own cockpit I found it extremely difficult to overcome the desire for sleep and my yawns actually made my jaws ache.

We had just flown between two ranges of mountains in somewhat calmer weather to a point where the mountains on our port side seemed to end in a wide gap. As we were approaching this gap our machine went into a left-hand diving turn, swinging round the end of the range. The manoeuvre surprised me considerably, as we were turning off our compass course—for which I could see no reason.

As the engine had not been throttled back during this manoeuvre I concluded that Colonel Minchin was suffering from my own complaint and had fallen asleep. I gave him a push in the back with my foot—Colonel Minchin afterwards described it as a kick—to remind him that we were still making for Cairo. Like the good pilot that he is, Colonel Minchin first studied his compass. Then, turning to me with his invariable smile, he inquired how long we had been off our course, and immediately set off again in the proper direction.

INTO ITALY.

After crossing Mont Cenis Pass and Modane, which is the official air corridor to Switzerland, the mountains decreased in height and gradually the majestic grandeur of the Alps merged into the more sober-looking hills of Northern Italy. One could not help being strongly impressed by the unsuitability of this part of Europe for flying. With the uncertain and constantly varying weather conditions in this mountainous region landing facilities are necessary. But any sort of forced landing seems to be impossible.

In spite of our faith in our engine it was with a feeling of relief that we sighted the sea near Genoa, and flying down the coast we were not long in arriving over Pisa. The town is situated on what I believe is just about the first piece of country we had crossed in the preceding 3½ hours on which a forced landing might be made



"SHROUDED IN MYSTERY'S CLOUDS."—The Bloodhound over the Alps near the Mont Cenis.

with any degree of safety. Along the whole of the coast steep hills run sheer down into the sea and any occasional stretch of level beach appeared to be built upon to form one of the many pleasant seaside resorts along the Gulf of Genoa.

It was about 14.00 hrs. when we landed at Pisa and straight away we were given an impression of good-hearted hospitality and comradeship. Awaiting our arrival was the Commandant of the Italian Air Force Squadron stationed at Pisa together with his officers and the representative of the Shell Petrol Company. Everything which could have been arranged in advance for our service and personal comfort was arranged.

The Commandant placed himself and his staff fully at our disposal. The mechanics of the squadron at once started to fill up our petrol tanks under our instructions and examined the whole of our aeroplane for any possible damage which might have been done or for any adjustment which might be required. Colonel Minchin and myself were immediately taken off in a car to Pisa for a wash and food whilst the Customs formalities were being negotiated.

After a quick lunch we were driven round Pisa in an automobile for half an hour and were shown the leaning tower and other interesting features. In fact the kindness which we received was almost embarrassing.

When we arrived back the Customs clearance had been effected and considerable interest was being taken in our machine and engine. This was particularly so when the reason for the seals upon the engine was explained. And when the officials heard of the service record of this particular engine they were enormously impressed by this proof of British Aero-engine reliability.

THE END OF THE FIRST DAY.

About 16.00 hrs. we proceeded on our way towards Brindisi. Again the route was over mountainous country, leading past Rome towards the South. In Southern Italy the mountains were certainly lower than in the Alpine regions, but still they were sufficiently uninviting and one was glad to feel that there was no risk of one having to make a closer acquaintance with them.

By the time Foggia was reached, however, the landing conditions had changed enormously. Here low country stretches towards the sea, in its way not unlike Salisbury Plain. It was the first good open country we had struck since leaving France.

Gradually, however, although the contour of the land showed little change, its suitability from an aviation standpoint altered and by the time we reached Bari the country was densely cultivated. Mile after mile, with hardly a break, fruit orchards and olive groves appeared to cover the whole of the available ground. The light was failing so that it became necessary for us to fly quite low and this brought home the appreciation of what a forced landing would mean in this thickly growing orchard district.

It was already dusk when we sighted the two huge airship sheds at Brindisi and I fired a Vérey cartridge to get some idea of the wind direction. Ten minutes after landing at Brindisi the machine was in the hanger and it was totally dark.

THE BRINDISI MUDDLE.

Brindisi aerodrome is to-day practically unused. As a result there are very few conveniences of any kind. And nobody was quite able to understand why we had been instructed by the Italian Government that we must land there.

The Maresciallo in charge, with his five assistants, were exceedingly anxious to help us in any way they could, but what they could do was very little. No lights were available at the aerodrome or in the sheds and it was only after nearly an hour's search that two small oil lamps were ultimately procured. Even after these had put in an appearance it was not safe to approach with them near the aeroplane. By feeling in the dark as well as we could I had drained the filters and float chambers of petrol.

So far we had been able to keep to our itinerary and the prospects had seemed bright for our making Cairo within the two days of our leaving Croydon. The engine was running perfectly and the aircraft was in the best possible condition.

It was somewhat of a disappointment to us, therefore, to learn that although the petrol for our use was on the aerodrome it could not be had by us until the representative of the Shell Company arrived and he was in Brindisi some 20 miles distant. There was no telephone on the station so that it was impossible either to get in rapid touch with him, or with the Customs or with the Military authorities. So we had to send a message hoping that it would receive the quickest possible response.

When we came to think of the inner man the position was little better. No food was available at the aerodrome but the Maresciallo, with the courtesy which one associates with the old Italian aristocrats, insisted on our accepting the whole of his own provisions. These were not much, but we had a boiled egg each for our supper together with wine and bread, and a couple of raw eggs for breakfast with wine and bread again to accompany.

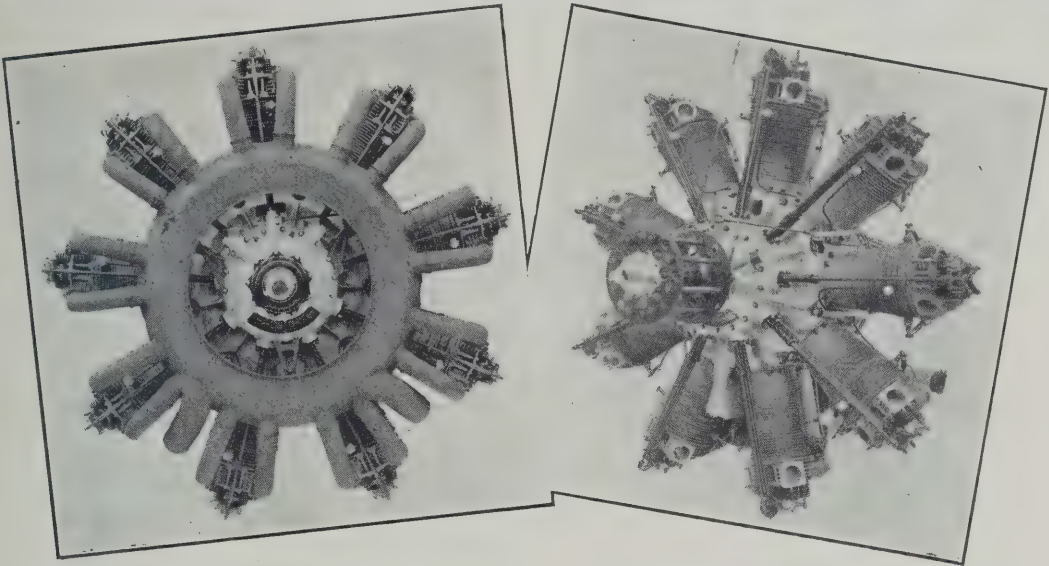
Even here our Italian friend's courtesy did not end, for he insisted on giving up his own bed to us, in which Colonel Minchin was able to turn in about 22.30 hrs. after a very hard day's flying. It was an hour later when I retired but I did not appear to have missed very much for neither of us was able to get much sleep owing to the swarms of mosquitoes which appear to infest this part of Italy.

THE SECOND DAY.

There was not much time for rest, for at 02.00 hrs. an Italian Officer from the Seaplane Station put in appearance and off to the aerodrome I had to go with him. With the aid of the headlights from



ITALIAN COURTESY.—Officers and men of the Regia Aeronautica and representatives of the Shell Co. helping with the refilling of the Bloodhound's tanks at Pisa.



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two automobiles we were able to get petrol and oil into the machine and by 04.00 hrs. once again the Bloodhound was in the open ready for the second day's flight. Customs were not yet cleared and the Italian Officer appeared very doubtful about releasing us. It was 05.15 hrs. before we were given our freedom.

Immediately we started upon our 100-mile trip across the Adriatic, over Corfu, and across the mountain country of Greece, arriving at Athens at about 09.00 hrs.

Until we arrived near our destination this part of the journey was exceedingly pleasant. The engine purred along with unvarying beat. The miles of sea were eaten up beneath us. And the island and coastal scenery was in many ways exceedingly fine.

On approaching Athens, however, the air bumps were extremely severe. We were bumped and shaken to such a degree that we were mighty glad to feel our wheels touch the aerodrome.

GREECE AND CRETE.

Officers of the Greek Marine and the representative of the Shell Company were ready to meet us and showed us every courtesy. The filling up with petrol was done at once. Food was given to us. And Colonel Minchin was able to snatch half-an-hour's rest.

It was about 11.00 hrs. when we left the Athens aerodrome, passing over the City towards the sea. The monumental ruins of the classic city were very impressive from the air. We flew down the Gulf of Ægina and just before 13.00 hrs. we passed over the mountainous island of Crete.

From the air at any rate, this island had eye-compelling characteristics. Sheer down into the sea the mountains run with never a break to serve for shore, and, stretching up to 8,000 feet, they are capped with snow. Over the sea a slight haze had spread and there was no horizon.

During the four hours' crossing of the Mediterranean not a single boat was seen. We had left Crete for two hours before the African coast was sighted. About this part of the trip there was something almost eerie. One could feel the air flying past and hear the whistle of the wind through the wires, but minute after minute one went on, apparently getting no further through the volume of haze which was spread out in front, and, in its turn, merged unbroken into the sea.

AFRICA.

It was with a certain amount of relief that we sighted the sandy coast, but it was in no way easy to locate exactly where we were and to estimate with correctness what our drift may have been.

Turning slightly to the West we sighted a military camp with an aerodrome, a little inland from a picturesque sandy bay. And to this we directed our course. Flying low, I was just about to fire a rocket to warn them that we were about to land and to give us the wind direction when we discovered an Italian flag flying in the breeze.

There was nothing for it but to retrace our way. So we proceeded eastwards along the fringe of the desert and the sea until we reached Sollum Bay.

Here was an aerodrome marked by four white stones and nearby had been built a frontier post hut of mud. Once again, however, a small Italian flag was in evidence and there was no doubt that we were still on the wrong side of the frontier.

A mile further on we spotted a pile of cases on the desert standing deserted about half a mile from some mud huts. Flying low over the pile we were relieved to find that these cases were marked with the words "Shell."

We landed safely on the sand, taxied up to the boxes and off I started to get assistance, as no ladder or funnels were in evidence. A number of Arabs were seated around the camp and, not without

difficulty, I managed to get a couple of them in tow and induced them to come out with me to the machine. One, however, escaped at the first opportunity, but apparently his intentions were of the best for he returned later with an Egyptian Army Lieutenant.

A SOLLUM OCCASION.

Filling up of the machine with petrol, although an amusing episode to look back upon, was certainly one of the most trying incidents of our journey. The heat was terrific and the large tins of petrol proved too heavy for us to lift with ease. The aluminium cowl of the machine had become too hot for us to touch with our hands, and the cylinder-heads and exhaust-pipes were the same. But the Arabs seemed to find no discomfort in the hot metal for they stood upon the cylinders, exhaust-pipes and rocker gear with their bare feet, to help in pouring in the petrol, without a word of complaint.

Although we had descended from they knew not where the Arabs were anxious to show us the courtesies of their race and one of our new friends soon appeared with a tray with three small cups of coffee. This appeared to be very welcome, but after taking one sip disillusion was complete. But my Arab friend was persistent and in my efforts to be equally courteous I managed to raise a sickly smile. So, after I had swallowed the first dose of my medicine he pursued me with the tray, insisting that the other two cups had been prepared for my especial benefit. Try as I would to dodge him around the machine he was not to be shaken off. Accordingly the second and third cups had to follow the first, and even now I shudder when I think of the flavour of my first Egyptian-made coffee.

THE SECOND DAY'S END

The re-petrolling went very slowly, and unhappily we were forced to realise that it would now be impossible to reach Cairo before dark. However, we were anxious to make an attempt and with our tanks about three-quarters full we started on our flight. In little more than half-an-hour darkness set in suddenly. And from the sea drifted in a blanket of mist which spread itself about 100 feet from the ground so that we were forced to fly below it and quite close to the desert.

Our compass was not illuminated, so we turned slightly towards the coast with the idea of reaching Alexandria before turning inland. But as the darkness became more intense and as there was no moon or stars to help navigation, Colonel Minchin decided very reluctantly that we must land. On the coast we were able to pick out two lagoons which we assumed to be Mathruh, where a landing place was marked on our maps.

A few small lights were visible around this settlement and as we circled round quite close to the ground more lights appeared. These we were gradually able to separate into two distinct groups. Flying quite close to the ground between them Colonel Minchin made an excellent landing, although he was not actually able to see the earth.

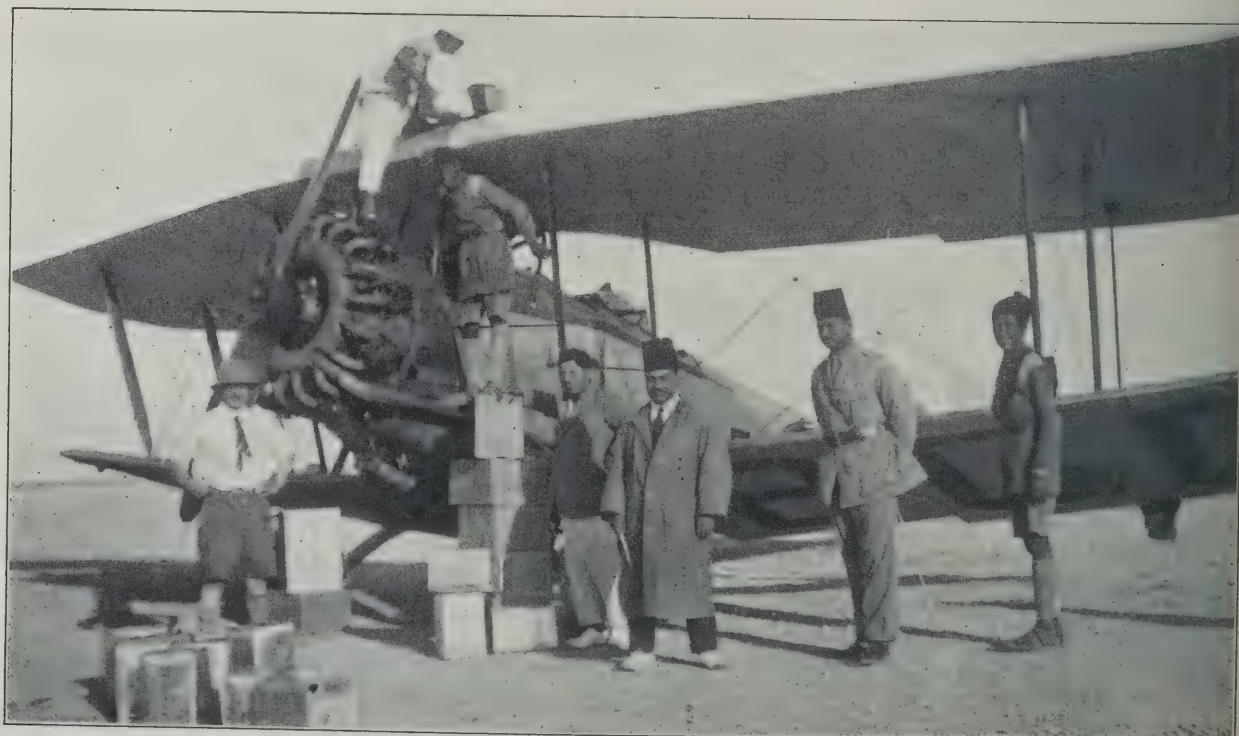
The machine ran some little distance and then there was a terrific bang in the rear of the fuselage. The machine swung violently to one side and pulled up in soft sand.

AT MATRUH.

We were in no way certain of the reception we should obtain from our Arab hosts as uninvited guests, but parties of them soon came out to us, took in charge our baggage and conducted us with courtesy towards the settlement. We were afraid we might have frightened them by flying so low around their dwellings, but they assured us that their only fear had been for our safety.

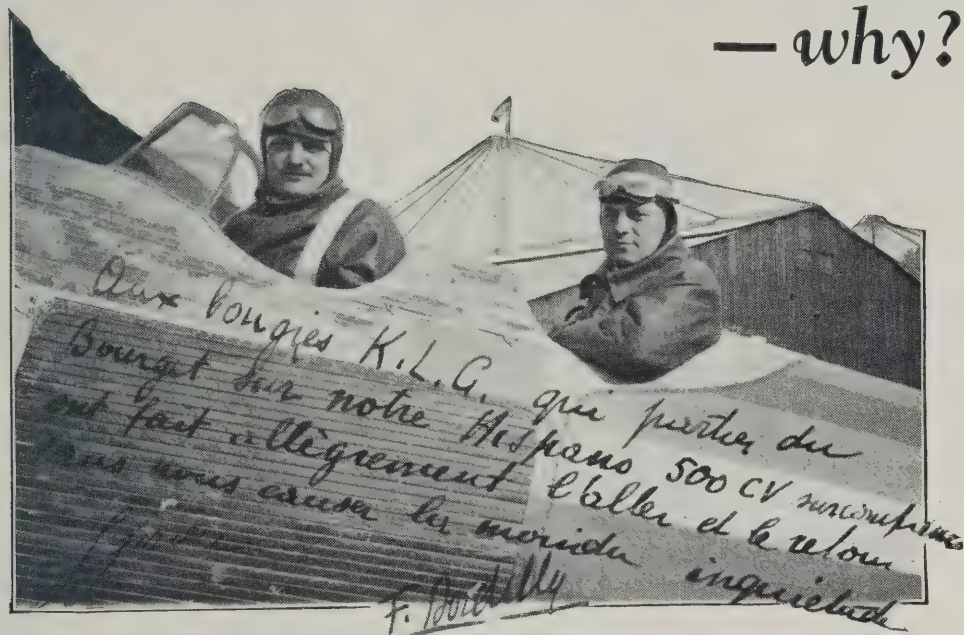
It was so dark that we were unable to see where we were or how matters stood with our machine so that we had to leave it as it stood for further inspection on the morrow.

Very soon we were met by some Egyptian officials—accompanied by Captain Hillier, a British Officer who had been Governor of the



ARMY CO-OPERATION.—An officer and men of the Egyptian Army helping to re-fuel the Bloodhound with Shell Petrol at Sollum.

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Province during the war. Arrangements were speedily made for food and accommodation.

After a very welcome night's rest we returned to our aeroplane. It did not take long to realise how near we had come to completely wrecking the machine—which had been guarded by native police during the night. Our landing had been checked by the Bloodhound running into some soft sand only a few feet from an elevated road made of rock.

The bang we had heard had been caused by the tail-skid striking a water-pipe laid across the desert from the coast to the Government Rest House. This pipe varied in height from being underneath the sand level to several feet above it, and the actual point of impact was several inches above the sand. Our wheels were buried up to their axles.

Captain Hillier got ropes which we fastened to the undercarriage. Here we called for the assistance of the Arabs, and a large party of wildly excited men laid hold of the ropes and with shouts and laughter hauled the machine up the sand onto the elevated roadway. So thoroughly did they do it that our difficulty was to get them to stop, for, with the easier going once the road was reached, they set off with their load at a steady trot and seemed to enjoy it.

Embarrassment from our allies did not end here, for, unfortunately, after thanking to the best of my ability those who had assisted us I made the mistake of picking out a couple of useful-looking Arabs to turn the airscrew for us and showed them how to do it. No sooner had they started to turn than they were practically trodden underfoot by a rush of the other Arabs, and every man on the settlement seemed to have made up his mind that he was going to take part in moving the prop.

So great was their excitement that I could not keep them back, and I became really concerned for the safety of the machine. Captain Hillier, however, came to the rescue and shouted some orders which ended the tumult.

THE JOURNEY'S END.

After starting the motor we taxied along the desert by the picturesque lagoon, took-off and headed for Cairo, where we landed about 5½ hours after of our taking off from Croydon aerodrome, the delays at Brindisi and Sollum having robbed us of the record which we had set our hearts on making.

We landed safely at the R.A.F. Aerodrome at Heliopolis but most unfortunately in taxiing up to the shed our port wing-tip caught against some portable barbed wire barriers. The wing-tip bend was smashed, along with two ribs, and some of the fabric was damaged.

By reason of the non-success of our making Cairo within the desired two days, we decided to attempt to fly back to England as quickly as possible, so as to make a five-days' journey of the return trip. We explained this to the officers and N.C.O.s. at Heliopolis and they immediately entered into the spirit of our needs and made a temporary repair to the wing-tip. In the heat the glue dried almost instantly, the fabric was stitched and doped into place, and in two hours a most excellent repair had been executed.

In the meantime I changed the plugs of the engine, Colonel Minchin and I had a wash and some food, with a very welcome cup of tea, and about two hours after landing at Cairo we were again in the air on our return trip.

THE HOMEWARD FLIGHT.

We reached Mersa Mathruh flying against a head wind. As the light was failing and knowing at least that we could get shelter there we decided to spend the night at this spot, where we were given good beds at the Government Rest House, well protected with mosquito nets.

Before dawn we were out again on the aerodrome—which, by the way, is situated at the end of the settlement opposite to that marked on the Air Ministry map. This had accounted for our badly selected landing place the previous night.

After our experience with prop-swinging the morning before, we counted ourselves distinctly fortunate in that none of our Arab friends were in evidence this second morning, and we were able to swing the prop and get our engine started without a further tumult.

The flight from here to Sollum, a distance of about 150 miles, took two hours against a head wind, so we were quite certain that our sea crossing would be a long one.

At Sollum the help available was much better than on the outward

journey and we were personally relieved of the arduous work of filling up the tanks. After a slight meal of bread and cheese and coffee we struck out on our long flight across the sea.

The head wind had gradually strengthened and once again a thick haze spread over the ocean so that no horizon was visible. It was quite three-quarters of an hour after the time that I had figured out that Crete should be visible before the first sight of the island was obtained. You can understand that it was with a certain amount of relief that I caught the first glimpse of its forbidding shores. Just before reaching the island we saw in the distance the dim outline of a ship, the first and only boat which we had seen during our sea crossings.

Colonel Minchin decided not to fly over the Cretan mountains but to make his way round the island so that we had a further two-hours' sea trip before we made our way into the Bay of Athens, where again we met bumpy conditions as on our outward journey.

The sea trip from Sollum had altogether occupied 5½ hours, during which the engine had purred along with a steady drone which had almost a somnolent effect.

GREECE AGAIN.

During our previous landing at Athens we had been warned of the danger of attack from the giant eagles which have their eyries along this coast. Quite recently one of the Greek Government seaplanes had been attacked by an eagle with the result that the machine had been smashed in the air and killed the pilot. I suppose this story must have been running through my brain as we were nearing the Tatoi aerodrome at Athens and flying at a height of about 2,000 feet, when we saw a very fine specimen of an eagle close to us.

It was Saturday afternoon when we landed at Athens and we found the whole of the staff had left for the day. Fortunately the Shell Company's representative was there and a few men were available to help us.

While petrol was being put into our machine we were taken to have some food, for which by this time we were more than ready. After a considerable time food arrived, consisting of two small cutlets and some potatoes. Although the party numbered five our host insisted upon us accepting the cutlets, but hungry as we were, we were quite unable to disengage any of the meaty portion from the bone. Another source of supply, however, came to light, namely some cold meat.

Colonel Minchin, fearing a repetition of the first course, declined a helping with courtly politeness, but I decided at any rate to give the course a trial. This proved quite satisfactory and, while I started on our next journey with a certain amount of content, Colonel Minchin left Athens just about as empty as he entered.

In taking-off in the direction of Home we had to climb very hard to get over the mountains which rise immediately behind the aerodrome. On reaching the top of the first range we met another large eagle, so close that I took the Vérey Light pistol from the cupboard and held it in readiness. However, this "stately monarch of the air" showed no signs of being unfriendly. And even if it had I doubt whether the Vérey Light pistol would have been very effective.

Our flight across Greece, Albania and Corfu was made more difficult by bad storms, and at times it appeared doubtful whether we should be able to get through them. The whole of this country is very bad for flying and the clouds hang about in the mountains for long periods.

In the course of my flying experience I do not think I have ever encountered worse bumps than we met with during this trip. The machine was buffeted this way and that and up and down till there were periods when I positively began to feel nervous. If I had been flying in a machine of which I had had any doubts whatever about the strength of the structure, some of our manoeuvres during this flight would have caused me the greatest possible concern.

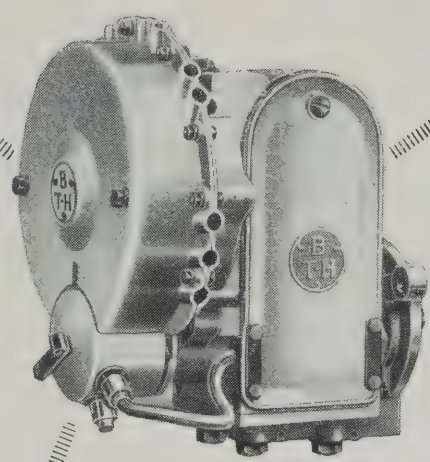
MORE BRINDISI LUCK

After an hour's journey over the Adriatic Sea we sighted Brindisi and landed. Before taxiing to the hangar, however, we found our starboard tyre was burst and our tail-skid broken. The aerodrome was very hard but the landing was normal and I can but think that the breakage happened when the machine ran back a foot or two after coming to rest.

Our old friend the Maresciallo was delighted to see us return. Apparently he desired to pay us the greatest honour which he could,



"HEAVE HO! MY HEARTIES!!"—Arabs and Gypsies hauling the Bloodhound onto the road at Mersa Matruh.



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for he immediately dashed back to his quarters and donned his smartest uniform before coming out to the aerodrome to greet us. His joy on shaking us by the hand was good to see.

Our damaged machine was more or less lifted into the hangar, jacked up onto some barrels, and the damaged parts removed. A message was immediately sent to Brindisi and the representative of the Shell Company to come to our help.

Next morning, Sunday, a mechanic was sent to us to make the repairs to the tail-skid, but he had neither the tools, the material nor the ability to do the job. Later in the day we were able to arrange with a mechanic at a garage to do the repairs, and at 15.00 hrs. on Monday afternoon, after several visits from us, he had the fittings repaired and under our supervision had made quite a sound job.

We hurried to the aerodrome with the parts and assembled them on the machine with hopes of making a start and getting to Pisa that night. Our disappointment can be imagined when we were told that it would not be permissible for us to leave until the officer of the Italian Air Service was present.

As I have previously mentioned, there was no telephone at the aerodrome so that we were forced to return to Brindisi to kick our heels for the night.

At the Seaplane Station we explained to the officer in charge that we wished to leave at the latest by 04.00 hrs. the following morning. With the greatest courtesy he informed us that all arrangements would be made for this, and that the necessary officer would be present before that time. We ourselves were out early and by three-thirty had everything in readiness for the start. Three-thirty however merged into four, and four into five, and five into six and still no officer had appeared. It was six-fifteen before the officer from the Seaplane Station arrived and gave us the clearance enabling us to depart.

FRIENDLY PISA.

Of our return journey to Pisa there are no particular incidents to record. We passed close to Rome and a seaplane from Lake Bracciano came up to have a look at us. At Pisa we were met by the same officers and other people who had been so kind on our outward journey.

The Commandant immediately informed us that he had obtained all possible weather reports and he was certain it was impossible for us to proceed owing to bad weather in the North of Italy and the Alps. We suggested that we might try flying across the Gulf of Genoa. Before he would agree to this he obtained weather reports from Genoa and along the coast and these unfortunately were all quite stereotyped—"flying impossible."

The following morning again he obtained weather reports for us from all possible quarters and although the weather at Pisa seemed fair, once again they all spoke of unfavourable conditions. Despite these reports, however, Colonel Minchin considered that with the aeroplane and engine which we had, weather should not deter us and so we made a start, flying out across the Gulf above Genoa and Savona to Albenga.

The weather gradually got worse and worse and at Albenga we met very bad lightning and thunderstorms, accompanied by such violent rain that we were forced to return to Pisa. On our way we met a Dornier seaplane flying close to the coast and exchanged greetings with the pilot, who we were told afterwards was Commandante Franco who had recently flown to South America.

Our friends at Pisa were determined to do all they could to reconcile us to the disappointment which we had suffered and Sr. Lorenzo Norci of the Nafta Company arranged for us to visit the Dornier works.

Here we saw a good deal which interested us very much, including the Dornier flying-boat with two Jupiter engines, as well as the machine in which the Marchese de Pinedo will attempt the flight round the World.

The following day we were personally introduced to the Marchese, who did everything he could to make our visit an enjoyable one. He personally arranged a special lunch at his residence to which he invited some of the chief people in Pisa, and this despite our diffidence on account of our lack of suitable clothing for a formal function of this kind. The records of flying experiences which we were able to exchange in conversation were most interesting to all of us and we thoroughly appreciated the kindness which induced the Marchese de Pinedo to entertain us in this way.

OFF AGAIN.

Next day the weather reports were again equally depressing, and the storms that we had encountered on the previous day included Pisa in their range. This was succeeded by fair weather the day after. Because of reports of the impossibility of crossing the Alps we proceeded along the coast.

Colonel Minchin made an excellent effort to penetrate inland and into the Alps. But after being forced down lower and lower into the heavy clouds we were obliged to turn left and make for the coast. We proceeded to fly over the sea a few miles from the coast line, passing San Remo, Mentone, Monaco, Nice, Cannes, Toulon to Marseilles, where we landed and took on board a supply of petrol.

Almost as necessary was food for ourselves, but unfortunately all that was obtainable on the Station was five sardines, a piece of bread and some coffee, which we shared between us. Colonel Minchin supplemented this with chocolate while I broke into a tin of our "iron rations."

Off again from Marseilles and flying along the valleys of the Durance and Rhône we again encountered bumpy weather, made exceptionally unpleasant because we could not afford to fly higher, in an attempt to avoid the bumps, as with the strong head wind met at height our speed was reduced to something like 50 miles an hour.

Colonel Minchin had thought of landing at Lyon. But we decided to fly straight on to Dijon. And there we stayed for the night.

THE LAST DAY.

Leaving Dijon at six on Saturday morning our flight to Paris was of no special interest and after clearing Customs there we carried on to England in the company of an Imperial Airways' machine which was equipped with wireless, arriving at Croydon about noon.

After clearing Customs and having a meal we heard that an open race for aeroplanes would shortly be held at Hendon aerodrome. So we immediately jumped into our machine and flew to Hendon to inquire if our entry could be accepted.

It marked a fitting close to our trip to be able to take part in this sporting race and we certainly think that people were tremendously impressed with the excellent running of the Jupiter engine when they heard that it was taking part in the race without any attention, or even changing of plugs, after it had done such strenuous running.

I should not like to close this report without paying a tribute to the piloting of Colonel Minchin. He had a very strenuous test of endurance and pilotage throughout the whole trip, and his airmanship on all occasions proved sound and correct. Thirteen hours a the joy-stick, flying over such difficult country and over wide stretches of sea must be considered a very fine effort indeed for any air pilot.

Our cruising air-speed was generally in the region of 105 m.p.h. but at times such high head winds were encountered that we made a little as 50 m.p.h. over the ground.

The following rough log gives the approximate distances and times for our trip:—

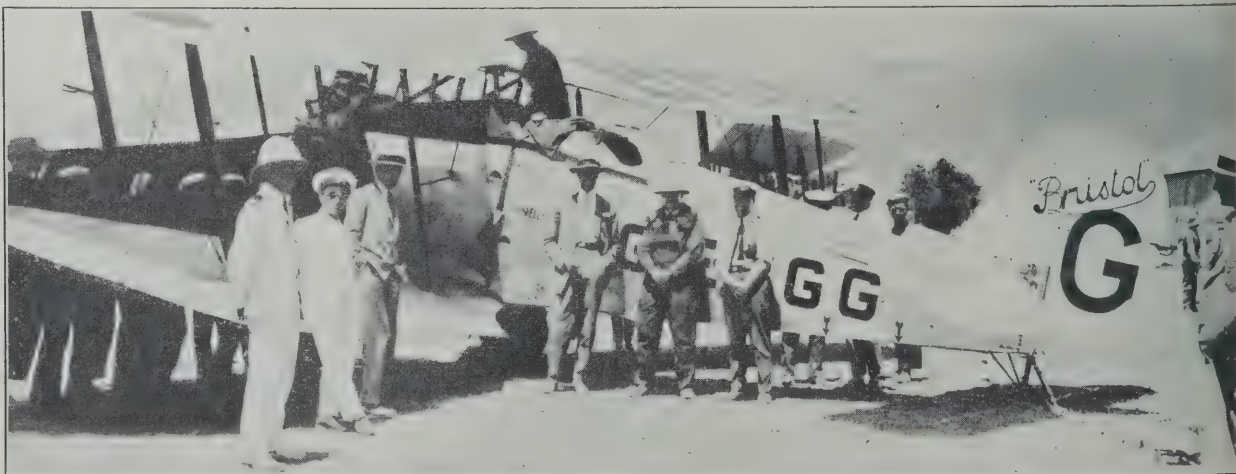
| OUT. | | | | HOME. | | | |
|-------------------|--------|--------|-------------------|-------|--------|--------|---|
| | Miles. | Hours. | | | Miles. | Hours. | |
| London | — | — | Cairo | — | — | — | — |
| Dijon | 400 | 4 | Mersa Mathruh ... | 300 | 3 | | |
| Pisa | 395 | 3½ | Sollum | 150 | 2 | | |
| Brindisi | 450 | 4 | Athens | 480 | 5½ | | |
| Athens | 400 | 3½ | Brindisi | 400 | 4½ | | |
| Sollum | 480 | 4½ | Pisa | 450 | 4½ | | |
| Mersa Mathruh ... | 150 | 1½ | Marseilles | 350 | 4 | | |
| Cairo | 300 | 3 | Dijon | 300 | 4½ | | |
| | | | Paris | 160 | 1½ | | |
| | | | London | 240 | 2½ | | |
| Total | | | | 5,405 | 56½ | | |

AN EDITORIAL COMMENT.

No account such as the foregoing would completely serve its purpose without a proper tribute being paid to the makers of the materials which made success possible.

In the famous Jupiter Engine the aluminium parts are made from ingots supplied by the British Aluminium Co., and the duralumin parts are made by J. Booth and Co. Ltd.

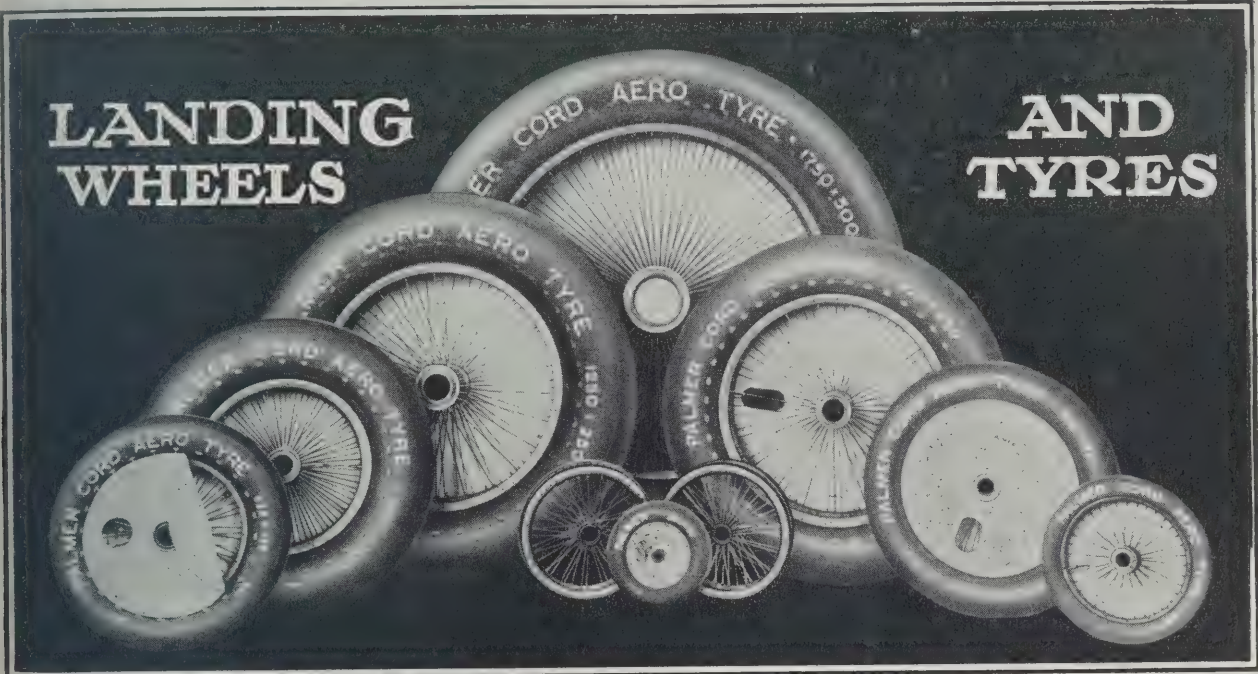
The piston rings are made by the British Piston Co.



A PLACE IN THE SUN.—The Bloodhound and her crew with officers and men of the Greek Naval Air Service at Athens.



PALMER



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132, 46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132, 46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132, 46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132, 46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
Grease gun equipment is now a standard fitting on all wheels.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The spring wire comes from Bruntons' of Musselburgh. Steel bars are supplied by Firth's of Sheffield. "Invar" bar metal comes from Wiggins of Birmingham. Forgings, stampings and so forth are made by Vickers Ltd. of Barrow and Sheffield.

Roller bearings for the crankshaft are made by the Skeffko firm. The crankshaft bearings themselves and the caged ball-bearings for the distributor—essentially highly specialised work, demanding workmanship of the finest—are made for the Jupiter by Ransome and Marles, of Newark-on-Trent. This firm has given particular attention to bearings capable of standing high stresses, and the World-wide success of Jupiter engines has proved how well the design and materials have fulfilled their purpose.

Wherever plain bearings are used they are, almost of necessity, Hoyt Metal of one sort or another. Everybody uses Hoyt Metal in these days. When bearing metal is mentioned one thinks of Hoyt automatically.

Valve-rockers and other exposed steel parts are protected against rust by the Coslett process, and the cylinders and cylinder-heads are protected against corrosion by Platinising Ltd. of Bath.

On the electrical side,—of course the sparking-plugs are K.L.Gs. That almost goes without saying, but one has to say it in case anybody does not know.

The magnetos are—equally, of course—British Thomson-Houstons, of the C.E.g type. B.T.H. have the British aero-engine market to themselves in these days.

The high-tension leads come from British Insulated Cables, Ltd. The petrol used throughout the flight was Shell, and Shell oil was used. So naturally there was no trouble with carburation or lubrication.

The good old Bloodhound was doped with Cellon, which remained unaffected by English rain, Alpine snow and mist, Greek dust or Egyptian sand.

And naturally the tyres were Palmers. There is nothing like Palmers for aircraft.

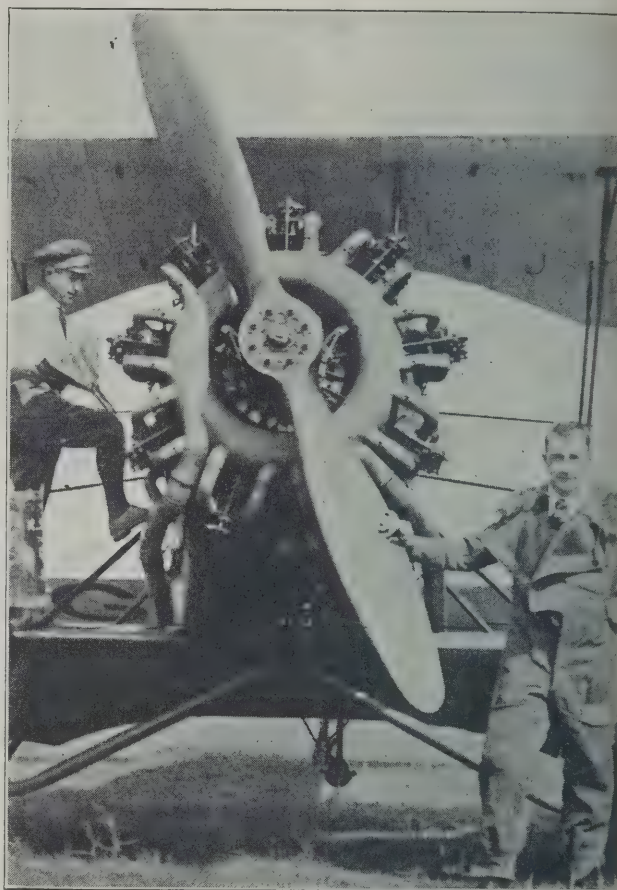
Altogether all the parts and materials in the machine proved themselves worthy to be joined together under the name "Bristol," which ever since 1910 has indicated high-water mark in British Aircraft Construction.—C. G. G.

A FRENCH COMMENT.

Commenting on the question raised in Parliament on Aug. 4 by Cdr. Bellairs on Air Records and the Prime Minister's reply to the effect that he did not see any connection between the winning of records and the present air policy of His Majesty's Government, a French contemporary, *L'Aero Sport*, makes the following sarcastic statement:—

"As one can see, Mr. Baldwin does not like records and for him air policy can be summed up in a single phrase, 'Naval and Military Aviation.' Commercial aviation is of only secondary importance. Mustn't one look here for one of the reasons for the meagre results of the aeronautical industry in England?"

All the same, the Jupiter engine seems to be doing well enough.—C. G. G.



THE MOTIVE POWER.—The Bristol Jupiter Mark VI, which set up this remarkable record. It is here seen being replenished with Shell Oil at Pisa. Mr. Mayer is seen in front of the machine.

"Equal **R&M** *new*"

BEARINGS

THIS WAS THE
OFFICIAL DESCRIPTION OF
THE CONDITION OF R & M CRANKSHAFT BEARINGS
FITTED TO THE ENGINE OF THE BRISTOL-BLOODHOUND-BIPLANE,
WHICH RECENTLY FLEW 25,000 MILES WITHOUT ADJUSTMENT
UNDER OFFICIAL SUPERVISION.

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BUILT FOR
STRENUOUS
SERVICE



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BEST
BRITISH
BEARINGS



The Bristol Bloodhound (Bristol Jupiter Engine) piloted by Lieut. Colonel Minchin in the record London—Cairo Flight.

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WAS USED**
*as also in the endurance
test of 25,000 miles with
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C.6

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FRENCH ECONOMIC AEROPLANE COMPETITION.

The *Concours d'Avions Economiques* organised by the *Association Française Aérienne* under the patronage of the *Services de l'Aéronautique et des Transports Aériens*, was held at Orly, near Paris, between Aug. 9 and Aug. 15.

The object of the competition was to discover the qualities of small aircraft suitable for civil or military training or air-touring.

The following was the programme of the competition:—

Aug. 9.—Presentation of the Aircraft at Orly.

Aug. 10 and 11.—Fuel Consumption trials. With 8 kgs. of fuel for single-seaters and 14 kgs. for two-seaters, the competitors had to carry out, over the aerodrome, a number of circuits totalling 50 kms. ending with a climb to 1,000 m. The difference between the maximum permissible and the actual fuel consumption was taken into consideration in the final classification.

Aug. 12 and 13.—Landing tests. The competitors in flying over a 5 m. obstacle had to pull up within 350 m. of the obstacle, for which they received 10 points, plus one point for every 10 m. less than 350 m.

Aug. 13.—Climbing test to 2,000 m. The competitor reaching 2,000 m. received 20 points plus one point for every minute less than 40 mins.

Aug. 14.—Take-off tests. The competitors taking-off in less than 300 m. received 10 points, plus one point for every 10 m. less than 300 m.

Aug. 15.—Speed tests over the circuit Orly—Saran (Orleans)—Orly (196 kms.).

All competitors realising a commercial speed equal or superior to 70 km.p.h. received 20 points, plus two points per km.p.h. over 70 km.p.h.

In addition to the above, the following details were taken into consideration for the award of points: (i) Machine of metal construction including covering, 20 points; (ii) Machine of wooden construction including covering, 20 points; (iii) Machine fitted with anti-fire equipment, 10 points; (iv) Machine fitted with parachute for pilot and passenger, 5 points.

Twenty points were also awarded if the pilot could start his engine unaided from the pilot's seat, and 10 points if the machine could be dismantled or folded by a crew of four, passed through an opening 3 m. wide by 3.5 m. high by 10 m. long, and re-assembled ready for flight in 120 mins.

The final classification formula was $Q + \frac{QD}{10}$, where Q represented the total number of points allotted and D equalled the difference in kilogrammes between the maximum permissible, and the actual, fuel consumption.

The following was the official list of entries:—(1) D.H. Moth (60 h.p. A.D.C. Cirrus) (Great Britain), Mrs. Elliott-Lynn. (2) Pander monoplane (30 h.p. Bristol Cherub) (Holland). (3) Pander biplane (60 h.p. Walter) (Holland). (4) Avia B.H.11 (60 h.p. Walter) (Czecho-Slovakia), M. Fritsch. (5) Avia B.H.11 (60 h.p. Walter) (Czecho-Slovakia), Dr. Z. Lhota. (6) Albert T.E.1 (40 h.p. Salmson) (France), M. Descamps. (7) Albert T.E.1 (40 h.p. Salmson) (France), Lieut. Thoret. (8) S.A.B.C.A. D.P.1 (45 h.p. Anzani) (Belgium), M. Wouters. (9) S.A.B.C.A. Camgul II (60 h.p. Anzani) (Belgium), M. Van Opstal. (10) D.H. Moth (60 h.p. A.D.C. Cirrus) (Great Britain), Capt. H. S. Broad. (11) C.A.1 monoplane (25 h.p. Anzani) (Italy). (12) C.A.1 monoplane (25 h.p. Anzani) (Italy). (13) Albessard monoplane (France). (14) Farman (France). (15) Caudron biplane (60 h.p. Salmson) (France), M.M. Van Laere and Delmotte. (16) R.L. monoplane (25 h.p. Anzani) (France), M.M. Roques and Lefolcalvez. (17) De Monge 7-5 monoplane (two 30 h.p. Bugattis) (France).

Of this list only Nos. 1, 4, 5, 6, 7, 8, 9 and 16 undertook the eliminating tests. These eight machines represented Great Britain, France, Belgium, Czecho-Slovakia, and Holland. The R.L. monoplane, although carrying French registration markings, turned out to be a Pander, which is to be built in France by M.M. Roques and Lefolcalvez.

The following shows the results of the fuel consumption tests on Aug. 10 and 11, the figures representing fuel consumption and speed over 50 kilometres:—

(1) De Havilland Moth, 5.26 kilogs., 109.849 km.p.h. (4) Avia B.H.11, 6.2 kilogs., 132.061 km.p.h. (5) Avia B.H.11 6.7 kilogs., 132.352 km.p.h. (6) Albert T.E.1, 3.8 kilogs., 101.18 km.p.h. (7) Albert T.E.1, 3.75 kilogs., 107.13 km.p.h. (8) Sabca D.P.1, 7.02 kilogs., 111.524 km.p.h. (9) Sabca-Camgul II, 7.24 kilogs., 98.146 km.p.h. (16) R.L. (Pander), 6.49 kilogs., 93.36 km.p.h.

On Aug. 12 and the morning of the 13th, the landing tests were made. The results were as follows, the figures being the distance from the 5-metre obstacle to the stopping point:—

(6) Albert T.E.1 (Descamps), 164 m. and 174 m.; Sabca-Camgul (Van Opstal), 177 m. and 121.5 m.; (5) Avia B.H.11 (Lhota), 120.5 m.; (8) Sabca-D.P.1 (Wouters), 174 m. and 181 m.; (4) Avia B.H.11 (Fritsch), 191 m. and 184 m.; (7) Albert T.E.1 (Thoret), 131.5 m.; (16) R.L. (Roques), 111.5 m.

The two tests made by Mrs. Elliott-Lynn were annulled and further attempts were made on Aug. 14. On this occasion she succeeded in bettering all the other competitors.

On the afternoon of Aug. 13, the climbing test to 2,000 m. was done, with the following results:—(6) Albert T.E.1 (Descamps), 13 mins. 30 secs. (7) Albert T.E.1 (Thoret), 15 mins. 15 secs. (4) Avia B.H.11 (Fritsch), 18 mins. 30 secs. (9) Sabca-Camgul II (Van Opstal), 23 mins. 30 secs. (8) Sabca-D.P.1 (Wouters), 41 mins. 15 secs., (1) D.H. Moth (Mrs. Elliott-Lynn), 48 mins. 30 secs.

On the same day five competitors did the dismantling tests, for which a time limit of two hours was allowed.

The times were as follows:—D.H. Moth (Mrs. Elliott-Lynn), 3 mins. 19 secs.; Sabca-Camgul II (Van Opstal), 3 mins. 34 secs.; Sabca-D.P.1 (Wouters), 3 mins. 37 secs.; Avia B.H.11 (Fritsch), 7 mins. 9 secs.; and Albert T.E.1 (Descamps), 13 mins. 26 secs.

In the test for starting the engine from the pilot's seat, Mrs. Lynn was first. This test consists of starting the engine when cold, running it for one minute, stopping it and then repeating the process twice. The D.H. Moth was fitted with a hand-starter gear in the cockpit, and was apparently the only machine fitted with a practical hand-starter.

The actual results of the tests held on Aug. 14 were not available at the time of going to press, but the following is the final classification subject to verification by the *Aéro Club de France*.

(1) Avia B.H.11 (60 h.p. Walter engine), pilot Dr. Lhota, 607.25 points; (2) Avia B.H.11 (60 h.p. Walter engine), pilot M. Fritsch, 598.098 points; (3) Albert T.E.1 (40 h.p. Salmson engine), pilot M. Descamps, 567.15 points; (4) Albert T.E.1 (40 h.p. Salmson engine), pilot Lieut. Thoret, 550.96 points; (5) Sabca-Camgul II (60 h.p. Anzani engine), pilot Van Opstal, 474.308 points; (6) Sabca-D.P.1 (50 h.p. Anzani engine), pilot M. Wouters, 407.52 points; (7) De Havilland Moth 27/60 h.p. A.D.C. Cirrus engine, pilot Mrs. Elliott-Lynn, 391.16 points; and (8) R. L. monoplane (25 h.p. Anzani engine), pilots M.M. Roques and Lefolcalvez, 171.499 points.

The only English competitor, Mrs. Elliott-Lynn, a private owner on a perfectly standard unfaked Moth, had extremely bad luck. She was first in three out of seven tests, but was unfortunate in losing many points in the speed test over the Orly—Orleans—Orly circuit owing to a cracked cylinder-head. On the outward journey she was maintaining an average speed of 133 km.p.h. (83 m.p.h.) when the cylinder-head cracked. This necessitated cutting down the speed, and Mrs. Lynn on the return journey was compelled to fly at an altitude of 1,200 ft. and to deviate from her course in order to ensure a suitable landing ground should a forced landing be necessary.

The success of the two Avia B.H.11 monoplanes on points, following on their success in the 1925 *Coppa d'Italia*, brings the firm of Milos Bondy and Co. and their designers, M.M. Benes and Hajn, still further international prestige.

The two Albert T.E.1 single-seat monoplanes, France's sole representatives, upheld their reputation by putting up the fastest speed, the fastest climb, and the most economical running, but owing to the fact that they were only single-seaters they had to compete under a severe handicap, amounting to some 30 per cent. in the final allocation of points. The Albert T.E.1, flown by M. Descamps, made 102.5 m.p.h. over the speed circuit, which, with a 40 h.p. engine is very good indeed.

THE SAVAGE-BRAMSON ANTI-STALL GEAR IN FRANCE.

During the French Economic Aeroplane Competition, Mr. Bramson demonstrated the Savage-Bramson Anti-Stall Gear, which has been fitted to an S.E.C.M. biplane, before various high officials of the French Government, and it is announced that M. Odier, the manufacturer of the well-known Odier engine-starter, and other aircraft accessories, has obtained the right to construct the Savage-Bramson gear under license.

A CONCATENATION OF IDEAS.

A report was circulated during the week-end by a news agency to the effect that "a new racing Gloster-Napier, developed from the Gloster-Napier III, was tested near London by Mr. Pearcey."

This is typical of the constant errors circulated by the news agencies, owing to the fact that none of them has on its staff anyone with inside knowledge of aviation.

Here are the facts from which the above was evolved.

The Gloster-Napier IV, which has been evolved from Gloster III, is taking shape at Cheltenham, but will not be flying for two months.

Mr. Maurice Piercey was testing a Gloster Gorcock (Napier) at Cheltenham during the week-end.

The Gloster-Napier III seaplane was at Felixstowe last week and was due to be tested by Mr. Hubert Broad. It has been fitted with wing radiators and certain data are being got for possible incorporation in Gloster-Napier IV.

THE GERMAN SEAPLANE COMPETITION DESCRIBED.

BY AN EYEWITNESS.

The German Seaplane Competition at Warnemünde (Deutscher Seeflug-Wettbewerb 1926) began nominally on July 12. The closing date remained indefinite, because it had the peculiarity of depending on the badness of the weather. The obvious remark is that this requirement should not cause much delay, but the weather cannot even be trusted to be bad when wanted, and the organisers were prepared to have to wait a fortnight or so for a sea of the exact roughness required for the seaworthiness tests.

The competition was organised by the Deutscher Luftfahrt Verband with the approval of the German Air Council. Major von Tschudi was President of the organising and prize committees. There were four big prizes: a prize of 250,000 marks for the main competition; a reliability prize of 65,000 marks, a prize of 50,000 for the best performances in main competition with German engines, and a prize of 10,000 marks offered by the Ministry of Posts. About thirty minor prizes were offered by individuals, institutions and firms.

The last German seaplane trials were held in the summer of 1914 and were cut short by the outbreak of war. This year's programme was much more extensive. The most important of the new features were the 4,000 kilometre coastal flights and the seaworthiness tests.

The aim of the organisers was to obtain from the competition as much benefit for German aviation as possible. They started from the standpoint that German aviation, whatever it may have gained by compulsory concentration on certain problems (and it would seem to have gained a good deal more than it often admits) had much to make up now that the Allied restrictions have been removed and was not in a position to afford a straightforward seaplane race, with all the waste involved therein, or any competition based on one kind of performance only.

The simple speed or distance competition is apt to exclude useful types of craft and to encourage freak construction. The Deutscher Luftfahrt Verband sought a means of embracing in its competition the widest possible variety of types, giving equal consideration to the various qualities that go to make an efficient seaplane, and at the same time retaining an attractive sporting element. Although it admitted imperfections in its scheme, it considered it had found this means to a considerable extent in a series of mathematical formulæ which would cover a page of *THE AEROPLANE*, but are based on comparatively simple principles.

The conditions were drawn up so as to include practically any craft of public value, from two-seater instruction machines and mail-carriers to quite large freight and passenger machines, and to exclude only racing machines and what might be called out-sized "giant" seaplanes and toys unfitted for serious seaplane work.

The Competition consisted of three phases. The first consisted of technical tests. The second stage comprised the coastal reliability flights. The total distance to be flown in the four days was about 4,000 kilometres, divided roughly into 1,000 km. a day.

The last phase was the severe seaworthiness test. Thus a competitor might complete the technical trials and the coastal flights in excellent style and yet be placed out of the running for the prizes if his craft was incapable of withstanding the test in such a sea.

The sea did in fact put in some useful elimination work and made the trials like an ordinary competition and less like an exercise in algebra. One got the impression at the start that some competitors might consider themselves lucky to get ashore with a fragmentary souvenir of their late craft in their hands.

The large proportion of foreign engines was noticeable. The competition was "national," and the craft had to be of German construction, but for easily comprehensible reasons foreign engines had been admitted. The restrictions on German aviation had the effect of diverting interest from the production of high-powered engines to useful experiments in aircraft design.

The complete list of the entrants, with specifications of the machines, was given in tabular form in *THE AEROPLANE* last week. Also the results of the earlier stages of the Competition and the final result were described therein.

The weather, of which two aviators were the victims, was fairly consistent, and it was not necessary to wait long for the roughness and strength of sea and wind required for the seaworthiness tests. These tests were held on July 31.

Six machines remained in the competition; on that day three of them were eliminated by bad luck or the elements. The three surviving seaplanes were, in order of points gained throughout the Competition:—Heinkel H.E.5 (450 h.p. Napier Lion), pilot, von Gronau. Junkers W.33 (230/310 h.p. Junkers L.5), pilot, Langanke. Heinkel biplane H.D.24 (230/300 h.p. B.M.W.IV), pilot, Spies.

It took the mathematicians and the prize committee more than 10 days after the end of the Competition to settle this order and the division of the prizes, although the regulations had permitted sheer chance to wipe some excellent performances off the slate in less than as many minutes. It is only fair, however, to explain that a good deal of the delay was caused by a controller at one of the turning points, who sent his report to the chairman of his local Aero Club instead of to the Competition Committee. The chairman went off for a holiday cruise and forgot about the report.

Thus, as was expected, a seaplane with a British engine won the first place. Nobody, however, up to the last day would have wagered more than a mark on two machines with German engines being among the winners. The performances of these two German engines must be regarded as among the most interesting results of the Competition, although it was not, of course, intended to be particularly an engine trial.

The conditions, like those of every air race or competition, have come in for a considerable amount of criticism, which may be summed up to the effect that the organisers and the mathematicians were too ambitious. When I was at Warnemünde during the coastal reliability flights one of the most prominent of those concerned in the arrangement of the Competition remarked regretfully upon the utter impossibility of testing the competing craft to the degree contemplated. Far too much, he said, depended on the engine, the pilot, and chance. Or he may have said chance, the engine and the pilot. I forget the order. The aptness of this remark and of certain

other observations which shall be discussed later, may be judged better with the aid of the final results of the three stages of the Competition.

Six out of the 18 machines entered did not take part in the Competition for one reason or another. The L.F.G.V.59 did not turn up at Warnemünde. It was only held in reserve in case one of the two others should not be ready in time. The Caspar C.29 was unfortunately destroyed by fire at the works.

It was understood that the Dornier flying-boats were withdrawn because the firm was not quite satisfied with the trial flights with the new engines and airscrews and preferred not to run risks of anything but the best possible performances. The machines were, however, present at Warnemünde; they were used occasionally by members of the organising committee for control work, and they took part unofficially in the seaworthiness tests.

The big Gerbrecht 8-seater passenger seaplane with the three Thulin engines could not be got ready in time.

The Udet U.13 (420/600 h.p. B.M.W.VI) arrived complete, but too late to accomplish the technical tests by the appointed date. It was a pity that there was no opportunity to observe the performance of this engine.

The Rohrbach flying machines underwent some of the technical tests but were unable to complete them. Thus all the flying-boats had dropped out almost at the beginning. This caused much disappointment among those who had been looking forward to comparing the performances of seaplanes and flying-boats in the seaworthiness tests.

However, one of the Rohrbachs as well as the Dorniers took part in these tests unofficially. The comparison was not so valuable as had been hoped, mainly because the sea became rougher during the tests and the flying-boats did not attempt the full programme.

One should, however, begin at the beginning, with the technical tests.

I discovered at Warnemünde that hardly anybody either wanted, or intended to try, to understand the mathematical formulæ which had been so painstakingly worked out by the Institute for Aeronautical Research, although they were of absorbing interest to the mathematicians. Having failed to strike a spark of enthusiasm from members of the organising and "sport" committees or others interested more in flying than in formulæ, I attacked the experts themselves.

I believe that Professor Hoff, the Director of the Institute, made the system clear to me. He was remarkably patient. But I should hesitate to undergo an examination in it. The mathematicians sought to give equal consideration to each quality or performance, speed, climbing capacity, commercial radius, taking-off speed, economy of construction and, in the second stage of the competition, reliability.

A serious omission was, perhaps, alighting speed. The "ideal" speed to be expected from a craft was calculated from the weight empty, radius and climbing time. Against this was set the "measured speed," which was the medium between the highest speed measured in the technical trials and the average travelling speed over the coastal courses.

The technical tests were held between July 12 and July 23. The weather during that period was fairly good. Everybody seems to have been satisfied with the measurement of the taking-off speed by the film method described some weeks ago. Difficulties arose, however, in the case of the climbing time from 1,000 to 2,000 metres.

Nobody took longer than the prescribed 15 minutes and had to reduce his load, but the Heinkel competitors complained that they carried out their climbing tests under worse conditions than the Junkers machines, in spite of the fact that each competitor was entitled to three attempts. With the aid of the mathematicians the performances were supposed to be adjusted in relation to what is described as the "normal day." This appears to be that aeronautical impossibility, a day without a breath of air.

Further algebraical adjustments were made later which corrected the balance somewhat more to the satisfaction of the complainants. But one thing is clear after this competition; climbing time can never be measured satisfactorily unless all the competitors go up at the same time.

The difficulties of arranging such a simultaneous trial, even at an excellent combined seaplane station and aerodrome like Warnemünde, are considerable. And even if they were overcome there would still be inequalities to baffle the scientists; the difference, for instance, between the upward movement of the air over land and water due to the differences of temperature. All the machines would have to carry out their trials strictly over one or the other, and there would still remain to be considered those mysterious and curiously restricted local air movements of which certain birds appear to know how to take advantage.

Incidentally, it might be argued that any slight disadvantage which the Heinkel machines met with in the climbing tests could perhaps be set against the undoubted advantage they had at being at home at Warnemünde. Their works and sheds are on the spot, 100 yards inland from the alighting place, whereas the Junkers and L.F.C. competitors were in the position of visiting teams.

The second stage of the Competition, the Coastal Reliability Flights, began on Saturday, July 24.

They occupied four days. The course for each day was roughly 600 miles. The course for the 24th was from Warnemünde to Emden via Heiligenhafen, Kiel, Holtenau, Rendsburg, Brunsbüttelkoog, Hamburg, Harburg, Cuxhafen, Neu Werk, Bremerhafen, Elsfleth, Bremen, Elsfleth, Bremerhafen, Aussenjade lightship, Wilhelmshafen, Wangeroog, Norderney, Borkum, and back as far as Norderney, where the night was spent. Of the places mentioned Hamburg, Bremerhafen and Emden were compulsory alighting places, Wilhelmshafen was a refuelling station and the rest were turning points.

The return from Norderney the next day was by a different route. The third day's course was to Memel via Pillau and back to Pillau for the night, the return journey from Pillau being made by a different route on the fourth day. The courses were not easy.

The ten machines which had completed the technical tests left Warnemünde at 7 a.m. The start was a spectacular affair. All ten

rose into the air almost together behind the starting line. When the first Vérey light went up they shot away as at the start of a horse race, all ten being off before 7.03. The weather was excellent in the morning, but by evening local thunderstorms developed.

The heroes of the day were Langanke and his crew in the Junkers W.33. Owing to engine trouble they had to alight soon after the start. They decided that the engine would have to be changed. Arriving back at Warnemünde at 9.15 a.m. they substituted another L.5 engine, left at 2.45 p.m. and arrived at Wilhelmshafen that evening. Leaving the next morning at 4.15, they completed the course to Emden and returned at once to Warnemünde.

With a few short intervals they were 37 hours in the air. Although they lost some hours' official flying time and were penalised for missing one turning point and for changing their engine, they caught up and were able to leave on the Monday morning with the rest. The effort was worth making, as they took second place.

Von Dewitz, in the Heinkel monoplane with the Gnome-Rhone Jupiter engine, maintained the lead he had obtained in the technical tests, though he was penalised for missing a turning point. This he did unwittingly, having lost his map overboard.

On the evening of the 25th all the competitors were back at Warnemünde except Geissler, in one of the Heinkel biplanes, and Haase in the L.F.G.V.60. Geissler had dropped out of the Competition, having damaged his machine in alighting beyond repair.

During the return from Norderney Haase was held up at Tönning by engine trouble. It was during a sporting attempt the next day to keep in the Competition, although nearly 24 hours behind, that he lost his life. The weather was distinctly bad; a strong, gusty wind was blowing and the sea was rough. Haase left Tönning shortly after 10 a.m., but he had to descend again at Mürwik. After further strenuous work on the engine he and his mechanic, Kolbe, were ready to start again, but it was not until five o'clock that the wind had dropped sufficiently for the local Competition controllers to let them go. Permission was granted with reluctance, and they were advised by telephone from Warnemünde to follow the coast.

They were almost 24 hours behind and had practically no hope of a final place in the Competition. Nevertheless, if they could have reached Warnemünde that night they would still have been in the Competition. They set off straight across the open water. Another engine defect forced them down into the rough sea. After two hours the machine capsized. Haase and Kolbe each clung to a float.

That evening and all the night through aircraft and German and Danish destroyers looked for the wrecked seaplane in vain. Towards morning Haase became weak and Kolbe frequently had to pull him back as he slipped off the float. Eventually Kolbe's strength gave out too, and a short time before help came Haase was washed off his float and was not seen again.

The other casualty occurred that same day, when von Reppert, in the L.F.G.V.61 made a forced descent, not due to engine trouble, but to physical exhaustion after the strain of flying through the bad weather. His machine broke up. He and his two mechanics were picked up by a destroyer, but one of the mechanics had swallowed too much water to be revived.

On account of these unfortunate accidents a good deal of criticism has been directed at the organisation which does not seem entirely justified. Haase, one of the most experienced of German seaplane pilots, was, after all, practically out of the Competition. He lost his life in a sporting effort undertaken, so far as can be gathered, on his own responsibility, and he would probably have been the last to reproach the organisation. In the other case the crew of the L.F.G. appear to have been picked up as promptly as could have been expected and it was bad luck that one died later.

The seaworthiness tests held later were considered severe and the roughness of the sea prescribed was what is known here as "Seegang 4." On the day of these accidents the roughness was, according to this German system of reckoning, 6, so that there is, perhaps, some reason on the side of those who consider that flying should have been stopped that day.

"Realism" still has a strong hold in Germany, as was shown near Berlin recently during some Red Cross evolutions, in which school children flung themselves by arrangement from a ship into a lake, and, something going wrong with the rescue plans, a boy of 12 was drowned.

However, 6 out of 10 machines finished the 2,500 odd miles through changeable and trying weather. In addition to the accidents already mentioned, Zimmermann, who had done very well, came down in a rough sea and lost his machine. He and his crew were picked up.

Six machines remained to take the seaworthiness tests on July 31 when the required "Seegang 4" and wind 5 were available. Each machine had to make three starts and three descents and to describe a figure of eight on the water.

Von Gronau began and accomplished his tests without difficulty or damage. His colleague von Dewitz damaged both floats the first time he alighted. A tug, told off to assist, rammed the seaplane, which sank. The tug picked up the crew. Thus in a few minutes the excellent record of von Dewitz, who had led practically throughout the Competition and upheld his reputation as perhaps the best of the German seaplane pilots, war and post-war, was wiped out by circumstances above which he had no control and in which the construction of his craft and the efficiency of his engine were of no account.

It was simply an accident. If he had not been rammed he would right well have repaired the floats, as did other competitors.

Langanke and Spies completed the first tests successfully. Friedensburg and Starke both had floats damaged in the first descent. With von Dewitz's fate fresh in his mind, Starke declined assistance from sea craft. Both repaired the damage, but in the meantime the sea had become rougher and the proceedings were stopped until 4 p.m.

Friedensburg again damaged a float and gave up. Starke completed three starts and two descents, but failed to alight a third time and therefore dropped out of the Competition.

It had been laid down that, although there would be minor penalties for damage sustained, the seaworthiness test could only be passed or not passed. There was to be no classification. The three survivors completed their manoeuvres on the water without difficulty.

In spite of the suspension of the tests for several hours it cannot be said that all the competitors had the same sea and wind to contend with. The Rohrbach flying-boat alighted once and rose again. The Dorniers both alighted safely but owing to the roughness of the sea could not get up again. It was regrettable that the flying boats did not attempt the regulation three descents and starts with the weather improved. The comparison with the seaplanes was particularly useful in the circumstances.

These seaworthiness tests were drastic, and of the three factors mentioned by my distinguished friend luck would seem to have been the deciding one. The Competition was a patchwork of science, skill, sport and chance, and in the end it is hard to say what proved. If it proved anything, it would seem to be that the Heinkel H.E.5 with a British engine was the commercially efficient mail carrier that was sought, for, leaving aside the pure bad luck of von Dewitz on the last day, two of these machines had the first two places.

At one stage during the coastal flights I heard a wag suggest that it looked like a competition for the testing of British engines in German seaplanes. The Competition was "national," and the craft had to be of German construction, but for easily comprehensible reasons foreign engines were admitted. The restrictions on German aviation had the effect of diverting interest from the production of high-powered engines to useful experiments in aircraft design. One of the main objects of the Competition was to show where the German aircraft engine industry stands after the years of restriction and to obtain indications of the best line of development now that obstacles are removed.

Of the ten machines which started the coastal flight, five had British and five German engines. The proportion was maintained. Of the six survivors of those flights three had British and three German engines; of the three survivors of the whole Competition the first had a British engine and the other two had German engines.

It might perhaps be argued from the results that the Germans can reasonably go ahead along their present lines, taking advantage of the freedom from restrictions to increase h.p. for commercial safety. One of their chief complaints against the restrictions has always been that they were deprived of a reserve of power.

The chief lesson of the Competition would seem to be that it is hardly reasonable to expect, as the organisers hoped, to be able to embrace in a competition the widest variety of types, to give equal consideration to the various qualities that go to make an efficient seaplane and at the same time to retain an attractive sporting element. Either you must have a sporting competition or race, or you must have a cold scientific trial. The two do not mix.

The technical tests at Warnemünde were of the greatest interest by themselves, and would have been even more interesting if the regulations had permitted an extension of the time limit so as to give the Udet, the Rohrbachs and Gerbrecht time to take part. If the tests had stood alone this would have been possible. Tests lasting over several months might have been still more useful.

Other trials have been suggested by those interested in the technical development of German aviation, such as the testing of different types of seaplanes equipped with the same engine. The public, on the other hand, would be better served with a straightforward one-day seaplane race, a frankly sporting affair unmixed with algebraical exercises, and it would not be surprising if, next year, it got it.

THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Aug. 15.

The total flying time was 42 hrs. 15 mins.

The following members received flying instruction:—Miss O'Brien, R. V. Banks, R. L. Portway, V. H. Doree, M. P. Susman, T. C. Sharwood, L. G. Sykes, G. Eady, C. A. Rogers, Col. Farfan, G. W. West, H. Solomon, B. B. Tucker, C. E. Murrell, A. L. A. Petty, D. Usher, S. O. Bradshaw, J. A. Simson, E. D. Moss, N. Jones, J. H. Saffery, D. F. Martin, A. J. Richardson, E. K. Blyth, T. C. Angus, E. A. Lingard, C. H. Tutt, G. W. Hall, P. F. England, J. S. W. Garne, G. C. Bonner, J. G. Crammond, O. J. Tapper.

The following members made solo flights:—O. J. Tapper, N. J. Hulbert, A. Lees, A. H. Dalton, W. Hay, Major K. M. Beaumont, R. C. Presland, N. Jones, E. S. Brough, Capt. A. G. Lamplugh, C. H. Craig, G. Wallcousins, C. A. Rogers, A. G. D. Alderson, S. O. Bradshaw.

The following associate members had joy-rides:—G. W. West, A. F. Wallace, Mrs. Lamplugh, Mrs. Dalton.

Bournemouth Air Race Meeting.—The Committee has decided to send the four machines to Bournemouth and flying will, therefore, not take place at Stag Lane on Saturday and Sunday next.

The Lancashire Aero Club.

Report for week ending Aug. 15.

Machines in use I-V, M-Q, and OK. The weather has been bad.

Mr. Stack gave instruction to:—Messrs. Costa 3 hrs. 40 mins., Nelson 1 hr. 55 mins., Moss 1 hr. 15 mins., Gattrell 1 hr. 5 mins., Fallon 1 hr., Shires 45 mins., Anderson 45 mins., Hardy 45 mins., Wade 35 mins., Dyson 30 mins., Whittaker 30 mins., Crosswaite 25 mins., Rodman 25 mins., Davison 20 mins., Collinson 20 mins., Tummers 20 mins., Barker 20 mins., Goodyear 10 mins., Leeming 10 mins. Total 15 hrs. 75 mins.

Solo flights by Messrs. Leeming 6 hrs. 30 mins., Agar 2 hrs. 30 mins., Hardy 2 hrs., Lacayo 1 hr., Goodfellow 50 mins., Leete 45 mins., Wilkinson 40 mins., Michelson 30 mins. Total 14 hrs. 45 mins.

Mr. Stack gave Mr. and Mrs. Akbar joy-rides of 15 mins. each. Mr. Goodfellow gave R. Williams a joy-ride of 15 mins. Tests occupied 1 hr. 35 mins.

Total time flown 32 hrs. 20 mins.

On Wednesday H. Hardy made his first solo, since which time he has been busy piling up solos in order to go for his certificate.

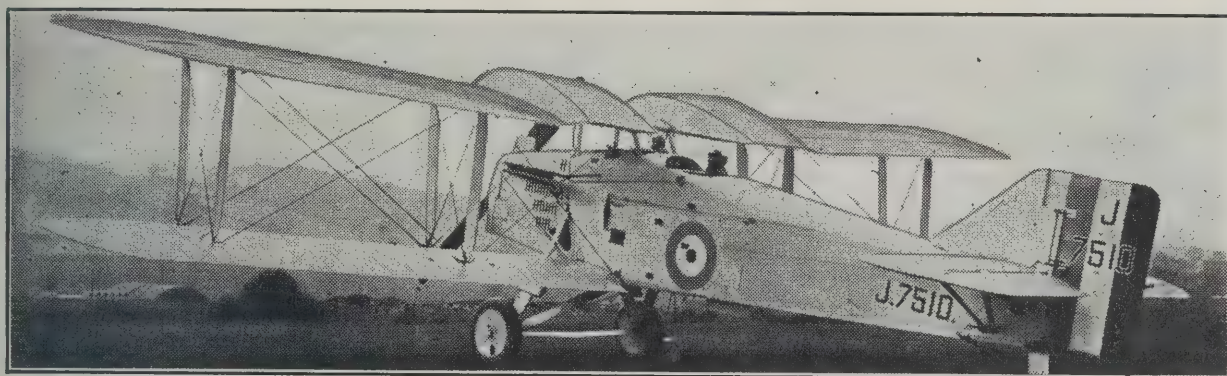
The Newcastle-upon-Tyne Aero Club Ltd.

Report for week ending Aug. 15.

Total flying time 23 hrs. 15 mins., of this 6 hrs. 45 mins. was flown on LX and 15 hrs. 30 mins. on LY.

Dual, 14 hrs. 45 mins. Solo, 4 hrs. 45 mins. "A" Pilots, 2 hrs. Joy-rides, 1 hr. 45 mins.

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THE photograph is of the Yeovil Day Bomber, one of the latest machines built at the Westland Aircraft Works. It marks an important stage in the development of this type of aircraft possessing among its other features of superiority a good view for pilot and observer in all directions, stability (for accurate bombing), gravity feed of petrol from tanks in upper plane, and oleo-rubber undercarriage with wide track. It has a Rolls-Royce Condor Engine of 670 h.p. with Leitner-Watts metal propeller. The performance of the machine which was built for the Air Ministry is highly satisfactory.

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The following members flew under instruction with Mr. Parkinson:—Mrs. Marks, Col. Sir Joseph Reed, Messrs. Irving, Twine, Middleton, V. S. Davidson, J. M. Davidson, Shaw, E. C. Kennedy, Bruce, Gilmore, Stawart, and Turnbull.

Mr. Phillips and Dr. Dixon had advanced dual instruction.

Mr. F. Howard Phillips, Mr. R. N. Bullock, Dr. Dixon and Mr. H. H. Leech flew solo, Mr. Leech making a cross-country flight to Brampton.

Mr. P. F. Heppell flew with Mrs. Mitchell as passenger.

Mr. R. N. Thompson flew with the following as passengers:—Mr. W. Simpson, Mr. J. Simpson, Mr. W. B. Ellis, Mrs. Thompson and Mrs. Waddell.

The following had joy-rides with Mr. Parkinson:—Mr. Middleton, Mr. Christensen, Councillor W. B. Ellis, Mr. Newton, Mr. Reeves and Mr. Prendergast.

Towards the end of the week very severe winds were experienced, giving way on Sunday to continuous rain and heavy mist, with clouds, later, at 100 feet. Wing Cdr. Fowler and Flt. Lt. J. Oliver landed on Sunday at 11.00 hrs. for petrol and before filling up was completed the weather became so bad that they could not get away. After waiting for an hour in the hope of its clearing, a test flight was made and it was found impossible to go on. The officers each flew with Mr. Parkinson for ten minutes, at under 100 feet, most of the time they were out of view of those on the aerodrome, being enveloped in low clouds. They were very well pleased with the Moth. This was the only flying the Moths got in on Sunday. Truly a Badminton Day.

Arrangements for the Club's Air Meeting are well in hand. At the time of writing, Air Commodore J. G. Weir, Capt. H. S. Broad and the Yorkshire Club have arranged to take part, but many more entries are expected when all replies are received.

Fine weather and more donations to the Prize Fund will assure success.

The Midland Aero Club.

Report for week ending July 31.

Total flying time for week 27 hrs. 26 mins.

The following members had flying instruction:—A. Gibbons, H. Smith, G. H. Perry, E. J. Brighton, C. Burrough, R. L. Jackson, C. Meeke, S. I. Beard, G. Savage, R. Summerfield.

The following members flew solo:—L. Knox, H. Willis, W. Swann, E. J. Brighton, G. H. Perry, R. L. Jackson.

On Wednesday, July 28, the following members successfully carried out their flying tests for Aviators' Certificates:—L. Knox, H. Willis, E. J. Brighton, G. H. Perry, W. Swann.

On Saturday Mrs. Lynn arrived on her Moth en route for Manchester and left on Sunday accompanied by Mr. E. J. Brighton.

Report for week ending Aug.

The total flying time for the week was 11 hrs. 19 mins.

The following members had flying instruction:—A. R. Gibbons, W. Swann, G. Savage, H. Smith, E. J. Beard.

The following members flew solo:—R. L. Jackson, W. Swann, C. L. Knox, E. J. Brighton.

Two joy-rides took 45 mins.

On Thursday Mr. R. L. Jackson successfully carried out his flying tests for his Certificate. During the height tests he attained a height of 3,200 ft.

During the week Mr. McDonough did a test flight on the Austin Whippet (G-EAPF). He reports very favourably on the machine's behaviour.

Mrs. Lynn called on Monday on her return journey to London and Sir John Rhodes on his Moth, accompanied by Mr. Sparkes, landed on Tuesday.

Report for week ending Aug. 14.

During the past week little flying has been possible owing to stormy weather. Total flying time for the week was 7 hrs. 50 mins.

The following members had flying instruction:—R. L. Goodway, A. P. Chaytor, E. J. Board, H. Smith, C. Burrows, J. Brinton, A. B. Gibbons.

The following members flew solo:—R. L. Jackson, C. L. Knox, W. Swann, E. J. Brighton, H. Willis.

On Thursday G-EELT went to the de Havilland Works for annual inspection for renewal of Certificate of Airworthiness.

We have entered one machine for several events in the Bournemouth Aviation Meeting, which is being held on Aug. 21 and 22.

The Hampshire Aeroplane Club.

Report for week ending Aug. 14.

The first week in the flying career of the Hampshire Aeroplane Club was quite a successful one. Over 30 members had instructional and passenger flight. In spite of bad weather on Wednesday, Thursday and Friday (on the last day no flying was possible) the total flying time reached 15 hrs. 15 mins., made up as follows:—Instructional flying 11 hrs. 35 mins., passenger flying 3 hrs. 40 mins.

The following members had instruction:—Miss Home 20 mins., Messrs. Mussellwhite 1 hr., Simmonds 1 hr. 20 mins., Courtney 30 mins., Bound 1 hr., Fry 1 hr. 30 mins., Perfect 1 hr. 5 mins., Keeping 1 hr. 10 mins., Nicholson 1 hr. 10 mins., Southcliffe 20 mins., Cooper 30 mins., Rodger 15 mins., Bishop 30 mins., Odbert 15 mins., Dobson 20 mins., Sommer 10 mins.

The following members had passenger flights:—Mrs. Perkins 15 mins., Mrs. Loughlin 15 mins., Mrs. Thomson 15 mins., Mrs. Easale 15 mins., Miss Home 25 mins., Maud Apsley 15 mins., Dr. Loughlin 15 mins., Messrs. Haslar 15 mins., Calvert 5 mins., Tearce 5 mins., Martins 30 mins., Appleford 10 mins., Dickson 10 mins., Westbrook 10 mins., Slate 5 mins., and Arnold 15 mins.

Saturday, the 14th, was one of the days set apart for 5s. flights for Associate Members, a number of whom took this opportunity.

The Club has entered "Gee-Bo" at Bournemouth in the Instructors' Race. It will be flown by Mr. Thomson, who will, however, be away from Hamble for a few hours only, so as to interfere as little as possible with instruction. In the other races Flg. Off. R. H. Stocken will fly the machine.

Henceforth tea will be available on the aerodrome each Saturday and Sunday.



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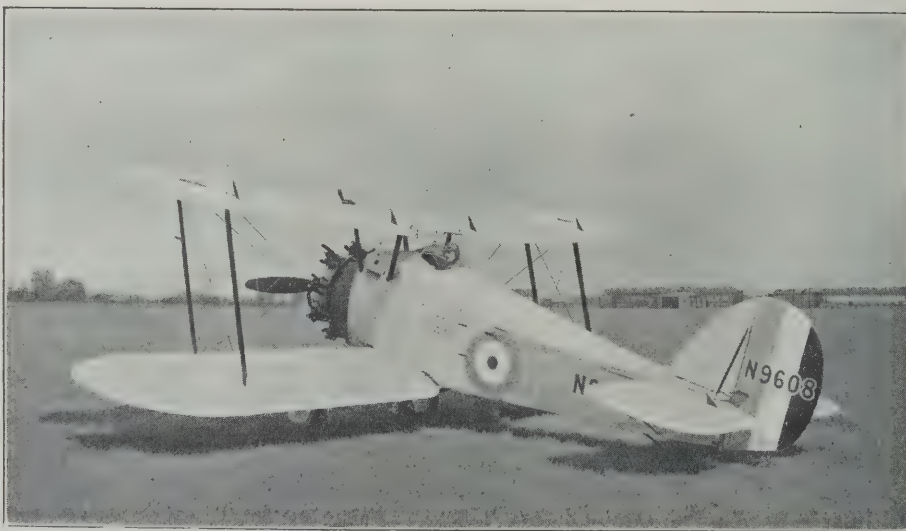
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ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 26; Tuesday, 30; Wednesday, 29; Thursday, 27; Friday, 29; Saturday, 29; Sunday, 13.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 91, passengers 841, freight 21 tons.

AIR UNION:

Paris—London: Machines 43, passengers 269, freight 11 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 22, passengers 98, freight 2½ tons.

SABENA:

Brussels—London: Machines 12, passengers 96.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 1, passengers 3.

PRIVATE:

Machines 14, passengers 6.

Total number of trips by British Machines, 105, carrying 847 passengers. Foreign Machines, 78, carrying 466 passengers.

Comparative Figures:

Week ending Aug. 15:

Machines, 183; Passengers, 1,313; Crews, 226; Total personnel, 1,539.

Corresponding week, 1925:

Machines, 176; Passengers, 1,011; Crews, 248; Total personnel, 1,425.

Corresponding week, 1924:

Machines, 176; Passengers, 904; Crews, 223; Total personnel, 1,127.

Corresponding week, 1923:

Machines, 144; Passengers, 724; Crews, 231; Total personnel, 955.

Corresponding week, 1922:

Machines, 176; Passengers, 642; Crews, 303; Total personnel, 945.

Corresponding week, 1921:

Machines, 114; Passengers, 437; Crews, 140; Total personnel, 577.

Corresponding week, 1920:

Machines, 123; Passengers, 262; Crews, 154; Total personnel, 416.

Croydon Notes.

For the second time in his life M. Louis Blériot flew the English Channel on Monday, Aug. 7. The first time he did so was on July 25, 1909. He then flew on the Blériot monoplane with a 25 h.p. Anzani engine, and the crossing of the Channel was the whole of a very adventurous flight. On Monday it was but a short portion of an inadvertent flight from Paris to London.

According to *The Times* "he flew in a large Bristol crystal-engined machine of 420 h.p." Presumably such an engine employs a crystal instead of valves. Is this another case of wireless aid to Civil Aviation?

Anyhow it is a distinct compliment to Mr. Roy Fedden and the Bristol Company (both of whom were very young when M. Blériot first crossed The Ditch) that M. Blériot chose the Jupiter. Evidently he had decided that he would wait until engines were quite reliable before he again trusted to an aeroplane.

The machine, which is illustrated in this issue of *THE AEROPLANE* (thanks to the Surrey Flying Services and the Anglo-American Oil Company), is M. Blériot's own private machine, a Spad limousine. The pilot was an old (in time though not in years) friend, M. Bajac, one of the finest cross-country pilots in the World. So M. Blériot knew what he was doing.

M. Blériot must really feel that the Channel is getting uncomfortably crowded. During the week in which he last flew it, he had the place almost to himself, except a short portion which the late M. Hubert Latham used.

Last week it was used by 183 machines, 1,539 people, and

35 tons of freight. Which must be a record week, for one cannot find in the figures published in *THE AEROPLANE* that 1,500 people have ever crossed the Channel by air in one week.

M. Blériot's thoughts must have been similar to those of an old-time motorist returning from abroad and finding the roads infested by everything from motor-bikes to charabancs. Probably he sighs for the nice quiet country and Channel of his youth.

Lt.-Col. G. L. P. Henderson's energy seems unlimited. By 10.00 hrs. every morning he has flown to Ostend and back with newspapers on the Surrey Flying Services' D.H.9 and is in London in his office by 10.30 hrs.

The Armstrong-Whitworth Argosy is again doing good work. Last week, in nine trips, she carried 143 passengers between London and Paris. On one occasion, with Mr. Hinchliffe as the Argonaut, she carried 21 passengers, the greatest number which has yet flown from London to Paris in one aeroplane.

On Saturday she left for Paris at midday, but landed at Lympne owing to valve trouble in the starboard engine. She then flew back to Croydon on the nose and port engines only. The trouble was not serious, for the next day she flew to Paris with 15 passengers.

A one-time member of the late Instone Air Line, regarding the Argosy, remarked how nice it was of Armstrong-Whitworths to have named the machine "familiar-like" after one of the Directors of the said Instone Line. One hopes that Mr. Augustus Instone ("Our Gussy"), duly appreciates the compliment. And, by way of compliment to the present firm, what about "Aeric"?

Recently when passing Croydon Aerodrome one was stung on the arm by an insect of such ferocity and venom that one was put out of action for a few days. It is suggested that the insect was imported from Cairo by Lt.-Col. Minchin and the Bristol Bloodhound, as its like has never been seen before, and that it has lain in wait for one ever since.

This gives rise to great possibilities. Who knows what the machines from Karachi in the future may not unwittingly import. Imagine the horror of a respectable Wallingtonian going out to post a letter and being met by a cobra. Or after one of Capt. Gladstone's air liners from Central Africa had arrived a respectable Waddonite might find a crocodile in the front garden. Possibly it might have the effect of bringing in prohibition in this country, so those running air lines to and from far countries must really be careful.

A.D.C. Aircraft Ltd., who closed their works for a few days to give the staff a well-earned holiday, are now in full blast again.

On Monday of last week, Mr. Perry was testing a D.H.9, as well as a Nimble-Martinsyde, on which Wing Cdr. Sholto Douglas will perform at Bournemouth. Wing Cdr. Douglas had it out on Thursday.—G. D.

MR. COBHAM REACHES MELBOURNE.

On Aug. 10, Mr. Alan Cobham and Sgt. Ward, who are flying from London to Melbourne and back in a De Havilland 50J (Armstrong-Siddeley Jaguar) left Camooweal for Charleville.

On Aug. 11 they flew to Sydney, where they were met by a Squadron of R.A.A.F. machines, and some Aero-Club Moths. They remained in Sydney to take part in various functions for five days.



FORCIBLE FEEDING.—The new mobile pump used by the British Petroleum Co. Ltd. for replenishing fuel tanks of aircraft. The pump can supply petrol at the rate of 20 gallons per minute, and the height above the pump and the distance away of the aircraft is immaterial. This picture was taken by Mr. J. C. C. Taylor, late of the Berkshire Aviation Co. Ltd., and now Aviation Manager of the B.P. Company.

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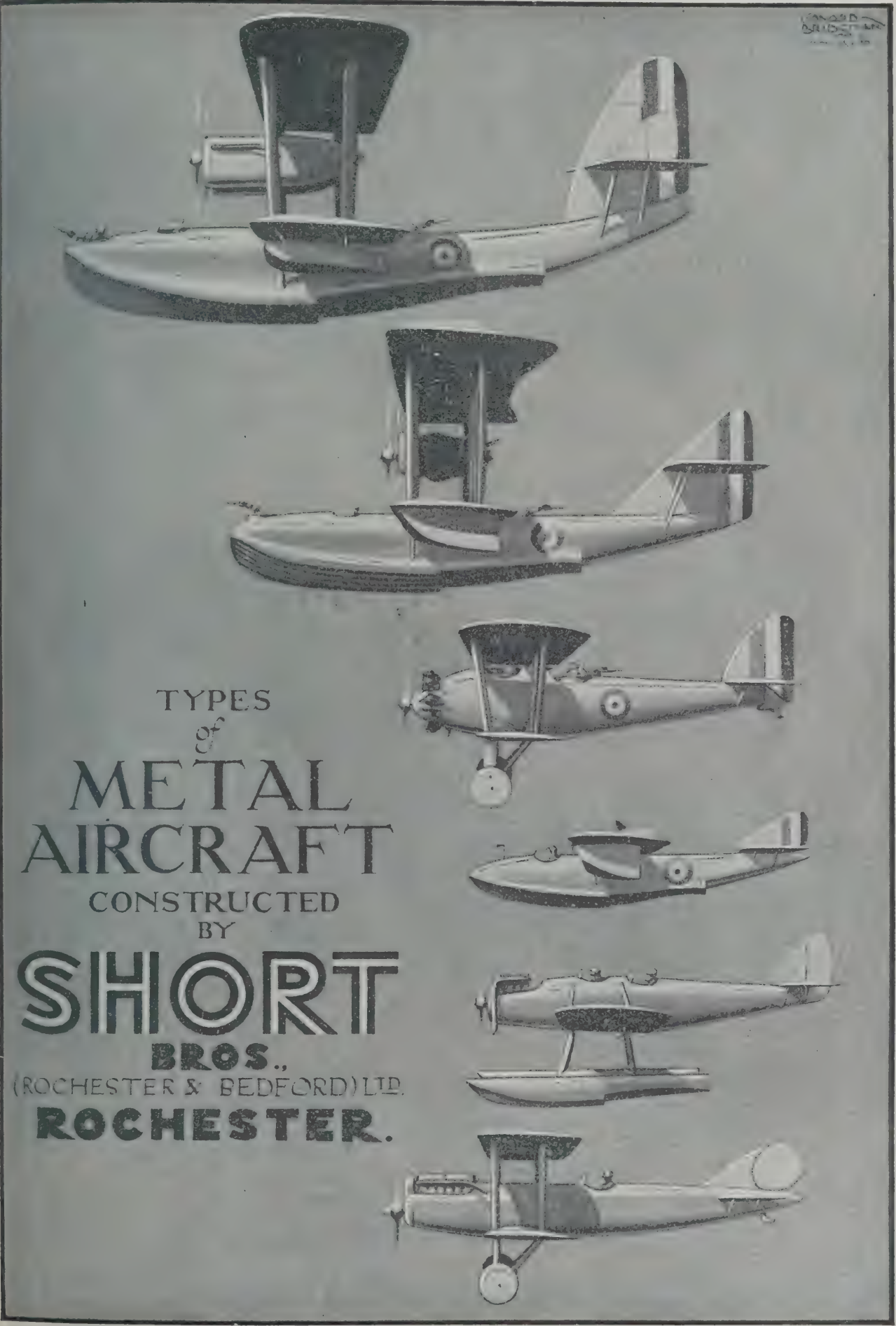
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On Aug. 15 they flew to Melbourne, where they were met by a crowd of 100,000 people. Thus they have taken 47 days to reach Melbourne. The distance covered is 13,000 miles.

No troubles of any kind have been encountered *en route* and the Armstrong-Siddeley Jaguar engine has run like a clock. Mr. Cobham has not attempted to hurry. He was delayed in Basra by the ever-to-be-regretted death of Mr. Elliott. He has taken part in functions here and there which have delayed him.

Mr. Cobham intends to attempt a high-speed flight home after overhauling the machine and engine. For high-speed long-distance flights he considers that 800 miles per day is a comfortable distance. Therefore we may expect him to arrive home 16 or 17 days after leaving Melbourne.

He will probably start back on Monday, Aug. 22 so that with decent luck he could get home on Sept. 7 or 8.

BERKSHIRE WORK.

The Berkshire Aviation Tours continue to spread the Gospel of Aviation in the most unlikely places. On Sunday, Aug. 8, at Alderley Edge, near Manchester, Messrs. Stirling and Leleu carried 291 passengers between them. Messrs. Kent and Beck were operating at Altrincham, still nearer Manchester, during the same week-end, and on the Sunday Mr. Kent carried 208 passengers and Mr. Beck 228.

The Berkshire Company's total for the Sunday alone was therefore 727 passengers. In addition, quite good crowds attended at both places to watch the exhibition flying.

Despite the outcry about bad trade, people still seem to have money to spend on flying, for even on the weekdays at Altrincham Messrs. Kent and Beck between them averaged 160 passengers a day.

During the previous week-end, Saturday, Sunday, and Monday, July 31, Aug. 1 and Aug. 2 (Bank Holiday), Mr. Stirling took up 293 passengers at Northwich with one machine. Mr. Kent's machine being temporarily out of action, Mr. Leleu joined the outfit at Altrincham and carried 408 passengers. And at the same place Mr. Beck, who broke his personal record in doing so, carried 633 passengers in the three days.

That is really teaching the people of this country to be air-minded.

A TIMELY GIFT.

Sir Charles Wakefield has arranged to pay to Mrs. Elliott, whose son was shot by an Arab while acting as Mr. Cobham's mechanic on his flight to Australia, an annuity of £100 in recognition of his service and heroism in the cause of British Aviation.

CIVIL AVIATION IN PARLIAMENT.

AIR PARCEL POST.

In the House of Commons on July 13, in reply to a question by COL. DAY, the POSTMASTER-GENERAL said that the number of parcels sent by air post through the Post Offices of Great Britain to Paris and Holland for the 12 months ended June 30 last was: To Paris 3,458, to Holland 1,903.

AIR GARAGES.

In the House of Commons on July 14, in reply to a question by COL. DAY, LORD STANLEY (for the Secretary of State for Air) said that as far as he was aware there was only one garage for privately-owned aeroplanes. It had been built to take six small folding aeroplanes. [Presumably Stag Lane.] Lord Stanley pointed out that facilities for garaging private aircraft existed at Government civil aerodromes on payment of the usual scale of charges, which amounted for the Moth type to 2s. 6d. for a night's accommodation, with 1s landing fee, or £2 10s. per month.

THE LATE MR. ELLIOTT.

In the House of Commons on July 27, SIR SAMUEL HOARE, asked by MR. DAY whether it was possible for an award or grant to be made to the mother of the late Mr. Elliott, engineer to Mr. Cobham, with a view to commemorating the valuable work in which he assisted in connection with aviation, said he regretted there were no funds at his disposal from which a grant could be made. It was, however, understood that the late Mr. Elliott was insured by the de Havilland Company and that the claim had been paid.

KHARTOUM-KISIMU.

SIR SAMUEL HOARE, in reply to MAJOR ROPNER, said that the proposed twelve months' experimental air service between Khartoum and Kisumu had been arranged without any guarantee of assistance from Air Votes. If it proved successful and a permanent service was instituted, a grant of financial assistance, whether in the form of subsidy or otherwise, would be carefully considered. The question of Imperial air routes and their future development was one of the subjects to be discussed with Dominion representatives at the forthcoming Imperial Conference.

INTERNATIONAL CO-OPERATION.

Avions Michel Wibault of Billancourt, Paris, have recently received an order for their all-metal monoplanes from the French Government.

These machines are similar to those being built by Vickers Ltd. at Weybridge for a foreign Government, there being an interchange of design by which detail designs, such as undercarriages and so forth, produced at Weybridge are used by M. Wibault at Billancourt, while French designs for other parts are used by Vickers Ltd.

THE D.H. GAZETTE.

The latest addition to the growing number of house journals of British Aircraft firms is *The D.H. Gazette*, the first number of which appeared during the second week of August.

The editor in his foreword apologises (rather unnecessarily, one thinks) for intruding upon the territory of the many publications dealing with aeronautical matters. The presence of a journal dealing specifically with the affairs and products of one particular firm can never be regarded as an intrusion by journals which endeavour to cover not only the entire British Industry but also the aeronautical affairs of the World.

Rather is such a journal welcomed in that it demonstrates a certain spirit that so often seems to be lacking among commercial firms the World over.

Also it carries with it something more than that which is known as "Service after Sales" in the automobile industry.

Again there is that pride in accomplishment (and the de Havilland Company certainly do accomplish things) which not only means so much to the firm and its employees, but, when translated into print, furnishes the exact kind of news that is invaluable from an advertisement point of view.

The first number of *The D.H. Gazette*—which is exceedingly well produced and printed—comprises sixteen pages, all of which are devoted solely to news and illustrations. Naturally a description of the King's Cup Race holds the pride of place, and although the results of the race have been freely published in the press, there are given many little pieces of "hitherto unpublished" news.

Notably there is a description of how the winning Moth was "cleaned up" for speed, which should be distinctly interesting to existing and prospective Moth owners.

Similarly an article on "The Maintenance of Moths," by Mr. J. S. M. Michie, the ground engineer to the London Aeroplane Club, is of considerable interest.

Other articles concern the growth of Stag Lane Aerodrome and Works, the de Havilland School of Flying, the new D.H. broadside Aero-engine Starter, Stag Lane Notes, Air Travel, etc., and a photograph of the D.H. Stag is published for the first time.

The D.H. Gazette will appear monthly, and applications for copies of the first and future issues should be made to the Editor, Stag Lane Aerodrome, Edgware, N.W.—L. B.

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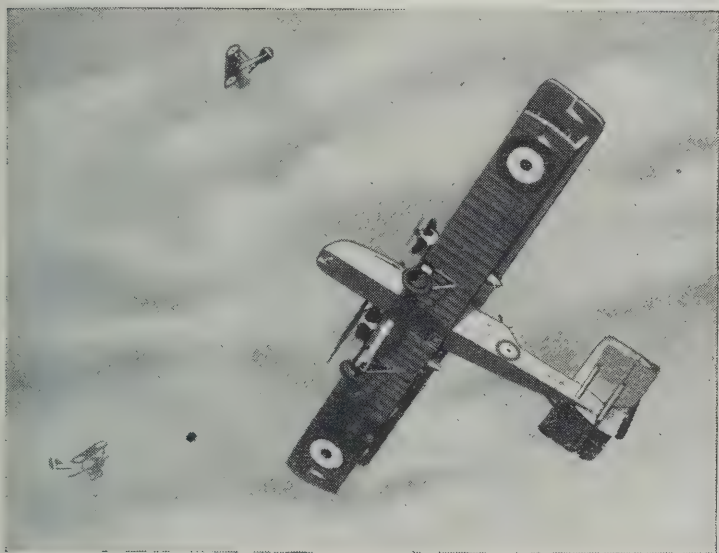
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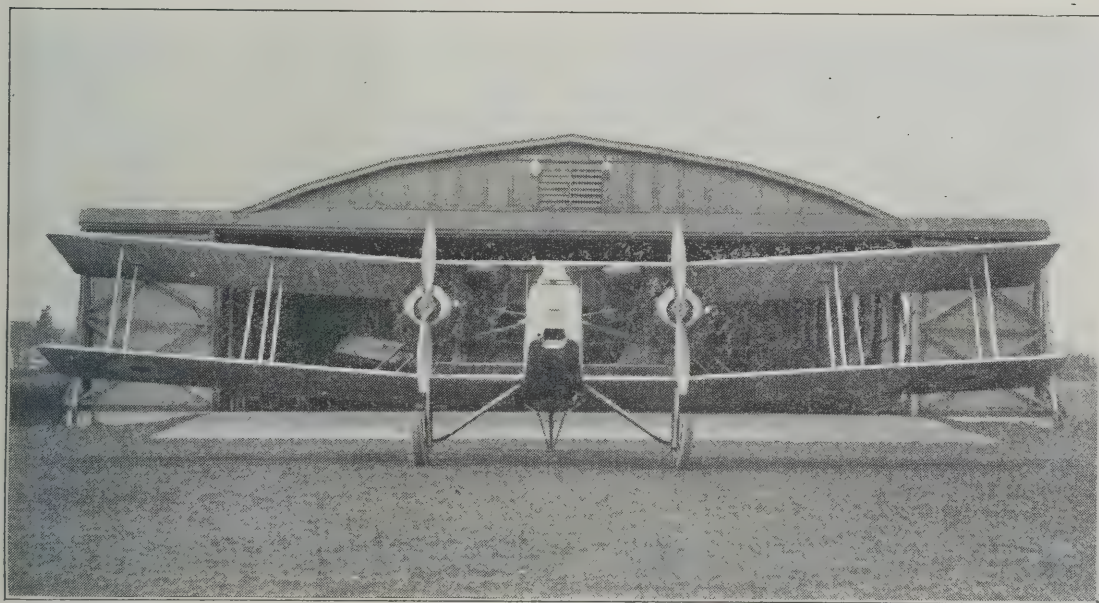
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AN IMPORTANT APPOINTMENT.

Mr. J. C. C. Taylor has been appointed Aviation Manager of the British Petroleum Co. Ltd., and is now located at the firm's headquarters at Britannic House, Moorgate.

Mr. Taylor, several years ago, with Mr. J. D. V. Holmes and Mr. A. L. Robinson, made up the Berkshire Aviation Co. Ltd. who did so much to spread abroad the Gospel of Aviation. He accompanied the Oxford University Arctic Expedition as chief engineer with the Avro machine which did much pioneer work within the Arctic Circle.

Of recent years the British Petroleum Co. Ltd. have entered with marked success into competition work in Aviation and their spirit is being used with success by the various joy-riding concerns about the country.

The acquisition of Mr. Taylor is likely to lead to further successes, and to friendly dealings with those with whom he comes into contact.—G. D.

CREDIT WHERE DUE.

Apart from the fact that Lieut.-Commander Byrd, U.S.N., and his companions in their flight in the region of the North Pole risked the certainty of a crash in the ice if brought down by engine failure, the flight, considered simply as a flight, was not particularly remarkable. It lasted 15½ hours, and many flights of greater duration have taken place.

It is well to remember that the German pilot, Reinhold Boehm, flew for more than 24 hours before the outbreak of war in 1914, and that several other German pilots and one or two Frenchmen had already flown for periods exceeding 15 hours but not quite reaching the 24 hours. Since then the World's duration record has been raised to 45 hrs. 11 mins. 59 secs.—without refuelling.

Nevertheless, the flight was made under rather exceptional conditions in the Arctic cold, and therefore much credit is due to the engines and their accessories. Various radial engines have been used under Arctic conditions in the last few years but this was, one believes, the first time that the Wright Whirlwind engines have been used for Arctic flying.

There is interest also in recording the fact that Scintilla magnetos were used in these engines. The Scintilla seems to be the standard magneto used in the United States and it has won its way to that position against quite severe competition.

An aeronautical engineer who knows the American trade inside out has told one that on one type of the Wright engines the Scintilla magneto was tried against another quite famous magneto with remarkable results. The Scintilla



WING AREA AND LIGHT LOADING.—Mr. T. O. M. Sopwith's yacht "Doris," taken when he and Mr. Sigmund were sailing at Cowes recently over the scene of the triumph of the Sopwith Bat-Boat in 1913.

magneto and the other were of equal weight and took exactly the same power to drive. But in a series of tests during which the two makes of magneto were used alternately, one being taken off and the other being put on at intervals the engine gave quite consistently 8 per cent. more power with the Scintilla than with the other make. This alone should be sufficient proof of superiority.

The fact that Lieut.-Commander Byrd's engines gave no trouble whatever during his flight shows at any rate that the magnetos were not affected in any way by the extreme cold when the engine was standing still.

Of the Fokker monoplane of course it is unnecessary to say anything. Fokkers have been used so often under Arctic conditions in Russia and in America that one assumed naturally that the machine would give no trouble.

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PERSONAL NOTICES.

DEATHS.

GOODING.—On Aug. 12, at Netheravon, Wiltshire, as the result of a flying accident, L.A.C. Clarence Henry Hooper Gooding, R.A.F.

HARVEY.—On Aug. 10, at Helwan, Egypt, as the result of a flying accident, A.C.1. Thomas Reginald Harvey, R.A.F.

SLATER.—On Aug. 10, at Helwan, Egypt, as the result of a flying accident, Herbert Gerald Slater, Flg. Off., No. 47 (Bombing) Sqdn., R.A.F.

Mr. Slater entered the R.A.F. in January, 1924, with a S.S. commission and was promoted to the rank of Flg. Off. in September, 1925. He was posted to No. 47 Sqdn. after completing a course of flying instruction at No. 4 Flying Training School, Abu Sueir, Egypt.

WATSON.—Killed in an aeroplane accident near Point Cook, Victoria, on July 1, T. Stuart Glendinning Watson, Cadet, Royal Australian Air Force, aged 23, eldest son of the late George Glendinning Watson, M.B., C.M., Coburg, Melbourne.

FORTHCOMING MARRIAGES.

GREGOR—JAMES.—The engagement is announced between Flt. Lt. J. B. Gregor, R.A.F. Medical Branch, and Evelyn Rose, daughter of Mr. and Mrs. A. H. James, of Haverfordwest, South Wales.

HALFORD—DAVIES.—An engagement is announced between Flt. Lt. Wallis Halford, R.A.F., eldest son of Mr. and Mrs. G. J. Halford of Cleve Prior, Worcestershire, and Miss Mary Davies, only daughter of the Rev. J. and Mrs. Wynne Davies, of Horton Rectory, Slough.

MACGREGOR—HARRISON.—An engagement is announced between Mr. Tain O'B. MacGregor, Royal Artillery and R.A.F., son of Lt.-Col. T. MacGregor, of Edinburgh, and Miss Edith Joan Harrison, daughter of the late H. A. Harrison, I.C.S., of Doghurst, Weymouth, and Miss Mayne Campbell, of Broxmore Park, Romsey, Hants.

BIRTHS.

BOYCOTT.—On Aug. 10, at Ormesby, Norfolk, the wife of A. Boycott, R.A.F. Educational Service (Egypt)—twin daughters.

BRIE.—On Aug. 14, at 36, Glebelands Avenue, Woodford, E.18, Dorothy, wife of Reginald A. C. Brie, Reserve of Air Force Officers— a son.

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ON THE BOURNEMOUTH RACE-MEETING.

To Bournemouth belongs the credit of having held the first flying meeting in the South of England, namely, that in July, 1910, at which the Honourable Charles Rolls was killed. And now, to Bournemouth belongs the credit of having held, on Aug. 21 and 22, the first flying race meeting in England organised as a sporting and commercial proposition by business men and not as a propagandist demonstration by aeronautical enthusiasts. And, one may add, that it was the first meeting held in which actual racing, and not exhibition flying, was the first consideration.

Fortunately nobody was killed or even seriously hurt, though there were moments when one rather had doubts. Which goes to show that the newer generations of pilots are as good as the old.

When the Bournemouth Meeting was proposed one felt rather doubtful about whether it was worth while to deal with it in THE AEROPLANE at all. After all, the readers of THE AEROPLANE are chiefly concerned with aeronautical progress. And there can be very little interest for them in seeing photographs of the same Moths and the same Avros and things over and over again. And there are not enough private owners of aeroplanes of any sort to give aeroplane racing a speculative interest (quite apart from speculation with the bookmakers) such as exists in horse racing and cycle racing and motor racing and even motor-boat racing.

Moreover, few people go to any vast amount of trouble to improve their machines in any way to get another mile or two an hour out of them as does the amateur motor-cycle racer or small car enthusiast. As a matter of fact, any enthusiast who thinks of indulging in any extensive faking or tuning, or, to use the more vulgar phrase, "hotting-up," is likely to find his style somewhat cramped by his Airworthiness Certificate, which specifies very clearly what his machine was at the time when the certificate was granted. Any departure from that specification automatically annuls the certificate.

Therefore the performance of each machine is known to a nicety by the handicappers. The only variations in performance one way or the other comes from cleverness in piloting or mistakes in piloting, barring matters of bad luck such as minor engine trouble or perhaps misjudgment of wind effects.

Perhaps in a way that is all to the good because air racing under such conditions becomes more and more a matter of piloting and less a matter of who is prepared to spend the most time and money on his machine. But one sometimes regrets that such an amount of petrol should be expended without something of definite technical value being gained.

Anyhow, the Bournemouth Meeting was very distinctly a success. One was told by Mr. Etches, the Secretary, that 5,000 people paid for admission on the Saturday afternoon, and quite a number paid extra for the admission of their cars, with the result that the takings on the Saturday afternoon alone paid for the organisation of the Meeting. At a rough guess one would say that there were something like 10,000 people there on the Sunday afternoon, so the Bournemouth Race Course people must have been able to show quite a nice little profit on the deal.

At any rate, they were so satisfied with themselves that they are considering putting up a £500 prize for the big race of the meeting which they propose to organise next year. And they certainly deserve whatever profits they made this year, simply for their enterprise in being the first to organise such a meeting.

AS USUAL.

The worst part of the organisation was, as might have been expected, the Royal Aero Club's part in it. It so happened that on Saturday the wind was in a direction which gave a good take-off from the point of view of the crowd. But on Sunday, the wind having gone further round to the West, the Stewards of the Royal Aero Club, in their wisdom, decreed that the machines could take off straight in the faces of the crowd and then do a sharp left-hand turn to come back onto the course. What would have happened if some of the engines had failed right over the crowd, one hates to think.

The take-off might equally well have been done along the front of the crowd with the turning point a few hundred yards outside the actual race-course. No race was over any particular distance, so a few hundred yards one way or the other would have made no difference. Then everybody would have flown the same distance, which, under Sunday's conditions, they did not—because some people got off and flew right over the crowd and back, whereas others turned within the limits of the race-course, or, as somebody remarked, "Dived straight off the ground," on a climbing turn.

Another silly thing, typical of the Royal Aero Club, was fixing the "home" turning point right away out at the far side of the race-course so that while going round the laps the machines never came anywhere near the crowd at all, and only gave them anything like a close-up view at the end of each race, when coming down the finishing straight. Why on earth the turning point could not have been fixed so that the machines had to fly the full length of the finishing straight before reaching it, one cannot imagine.

From years of experience of the Aero Club one is quite prepared to have them put up some plausible excuse for these follies. And evidently the Aero Club attitude of mind is contagious, for one believes that those responsible for these particular mistakes really know quite a lot about flying—in their unofficial capacities.

HELP FROM THE HORSES.

There is a great deal to be said in favour of holding air-race meetings at race-courses. The comfort of having proper grand-stands and smooth lawns and good arrangements for food and so forth is such an improvement on the slipshod, haphazard methods which go with a



AT BOURNEMOUTH.—A part of the Machine Park, as seen from the Members' Stand.



AT BOURNEMOUTH.—Left to right.—Two Moths (Cirrus), Mr. Butler on the D.H.37 (Nimbus) "Lois" and Wing Cdr. Sholto Douglas on the Avro (Airdisco), getting-off.

meeting at a regular aerodrome. At Bournemouth, everything was beautifully done, even to the working of the telegraph boards which enabled one to see who was flying in the different races and who had "won."

One hopes that the proprietors of other race-courses will try to arrange similar meetings next year. Naturally horse race-courses are not suitable for real speed machines, but with the growing number of what are commonly mis-called "light aeroplanes," a term which is very apt to mislead the uninitiated, there ought to be enough pilots available to put up quite a good show.

But the organisers of such future meetings will do well to remember that running an aeroplane is quite an expensive form of amusement and that if they want to get good entries they will have to offer some inducement to competitors, either in the form of quite valuable prizes, so that private owners and firms and clubs will think it worth while to spend a certain amount of money on the chance of winning a lot more, or else they will have to arrange to pay expenses, much in the way that even the purest amateurs among cricketers and tennis players receive their expenses when playing at any distance from their homes.

Air racing, to be a commercial success, must pay its own way. It must not be allowed to provide wealth for race-promoters at the expense of free performances by owner-pilots, subsidised flying clubs, and aircraft makers in search of advertisement.

A QUESTION FOR CLUB MEMBERS.

In connection with this, rather an interesting question arises. Are the various Flying Clubs justified in sending their machines away for a whole week-end to a race meeting, even if it is with the object of helping another of the existing flying clubs at its local "Pageant," let alone to make money for sports-promoters?

Of course, it is a very good advertisement for a club that its machines and pilots should put up a good show in competition with others. But one can quite imagine that members who cannot travel a couple of hundred miles for the fun of seeing their club machines compete, and who joined the club with the object of themselves learning to fly, may object very strongly to the club machines being away and to all flying being stopped during the week-end, which is the only time in each week at which the majority of members can go and get their little bit of flying.

It is true that it is a good thing to send machines about the country

to popularise aviation and so forth. But, after all, the object of a flying club is to provide flying for its members. And it is only natural that the members should like a little bit of flying for their subscription.

NEW PILOTS.

The flying at the Bournemouth Meeting was well worth watching and the un-aeronautical public certainly got value for their money and seemed to appreciate the fact. One of the most satisfactory features about the Meeting was the good show put up by new professional pilots and by amateur pilots.

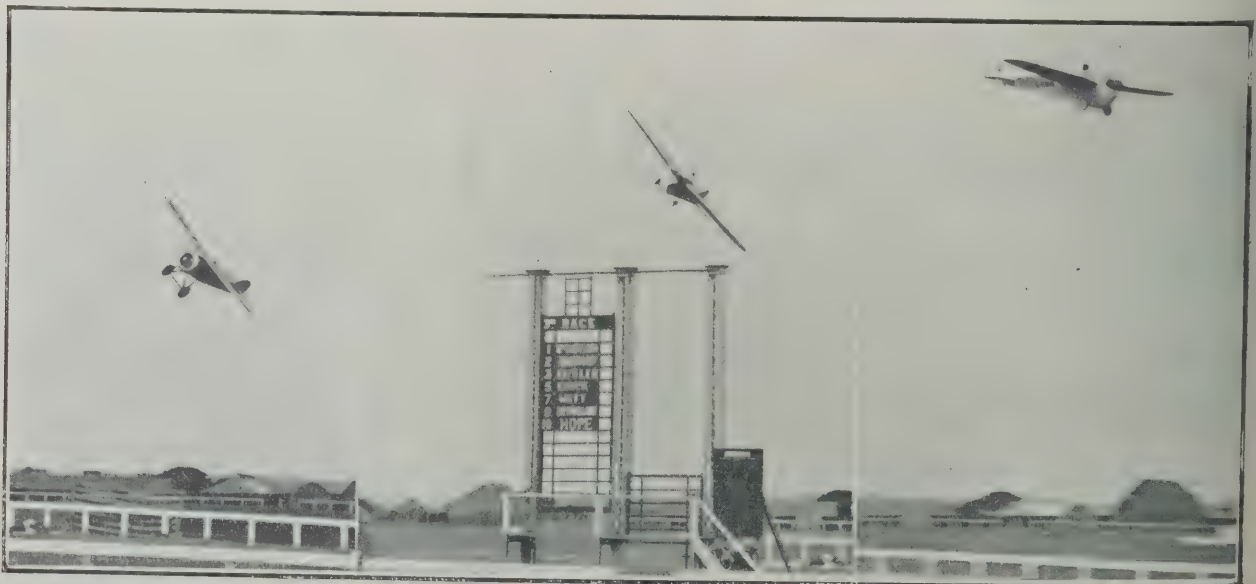
Undoubtedly the star turn from the point of view of the public was Mr. Dudley Watt, who, because his full name is D. A. N. Watt, and because his flying is, to put it mildly, emoting, has naturally acquired among the more frivolous members of the aeronautical community the nickname of "Dangerous Dan"—which anyhow is better than being known as "Dud" or "Duddles."

When one first saw Mr. Watt performing one did think that he was about the most dangerous and reckless flyer within one's experience. But now one is not quite so sure. He certainly has extraordinary skill and judgment. And his ancient Sopwith Swallow, consisting of a Camel fuselage to which braced monoplane wings were fitted by the late Harry Hawker, is an extremely controllable aeroplane which answers its controls admirably and goes where it is put.

If Mr. Watt does come to grief it will not be through lack of skill in getting himself out of a tight corner, it will be through being let down by his engine when he is in a tight corner into which he would never have got if he were a little more cautious or experienced. And if he does have a crash it will be wholesale and spectacular.

Watching his flying at Hendon on King's Cup day and seeing him cut in and out among the other machines, it struck one (regretfully, at that time) that he might be more dangerous to other people than to himself. But at Bournemouth on Sunday he deliberately swerved when winning the big race of the day in order to avoid giving his backwash to Flt. Lt. Chick on the little R.A.E. Hurricane. That showed not only good sportsmanship and a kindly consideration for others, but it also showed that he had his wits about him and was able to think quickly and accurately.

Incidentally the act was also courteous, because giving a man one's backwash in air racing is just as legitimate as it is in all kinds of boat racing.



AT BOURNEMOUTH.—Left to right.—Mr. Dudley Watt on the Sopwith Swallow and two views of Flt. Lt. Chick on the R.A.E. Hurricane (Bristol Cherub).

56,000 miles / without mishap ♦

FOUR Royal Air Force Fairey machines have completed successfully a flight from Cairo to Cape Town and back to England, keeping to scheduled time throughout.

The Napier water-cooled engines used were not specially tuned but taken from store as for an ordinary Service flight.

There was no change of engine during the whole flight.

“The flight may be considered a triumph for the all-British seaplanes fitted with **BRITISH NAPIER LION** engines. It was carried out without mishap. Not one of the engines was even given a ‘top overhaul’ during the flight route, which carried the machines over tropical jungles and vast areas of bush land.”

Manchester Dispatch,
22nd June, 1926.

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GEE-WHIZZ!!—An impression of Mr. Dudley Watt passing the post at Bournemouth on the old Sopwith Swallow, which used to belong to the late Harry Hawker.

One is inclined to think that Mr. Watt has the makings of a really first-class racing pilot, in that he certainly has good hands and eyes and judgment, and is sufficiently reckless to fly machines which older and more responsible pilots might hesitate to fly. If he is going to break his neck flying he may just as well do it gloriously in an effort to break a World's record, and if he is not born to go out in an air crash then he is capable of doing something quite big in the way of flying.

Anyhow, he is a thoroughly good sportsman and he provided quite a lot of both comic and sensational relief to the meeting. The way he taxied his machine round between the railings of the horse race-course after winning the big race was distinctly amusing. And judging by the way the crowd rushed to the railings to see the machine at close quarters he evidently provided a long-felt want.

Mr. Alan Butler's D.H.37 with the new 330 h.p. Nimbus engine also seemed to impress people quite a lot. The healthy note of the exhaust appeals to the crowd in these days when everybody is a motorist. And Mr. Butler's handling of the machine was splendid, although because of its size compared with the Moths and others it cannot be made to look so spectacular.

To those who have been connected with aviation since the early days there was a great deal of interest in the fact that Captain Geoffrey de Havilland, who began his flying in 1909, if one recollects rightly, but certainly not later than 1910, should be flying at this date as an amateur racing pilot. Those who believe that a pilot's is a short life and a gay one and that a man cannot fly well after he is about twenty-five or so, ought to see Captain de Havilland's masterly handling of his Moth with the Mark II Cirrus engine. Among all the Moth experts, of whom there is such a crowd to-day, there is nobody who flies one more prettily than does the founder of the de Havilland business himself.

Naturally the various Club instructors flew their races well and landed with extraordinary skill on a bumpy ground. Messrs. Sparks and St. Barbe of the London Club, Mr. McDonough of the Birmingham Club and Mr. Thomson of the Hampshire Club all put up very good shows. One was only sorry that Mr. Sparks' chronic rival, Mr. Parkinson, was not there to add to the keenness of the competition. But Newcastle is a long way from Bournemouth. So Mr. Parkinson did not bring his little green baize bag to fetch away his prizes, as he did at the Yorkshire Club's show.

Incidentally the colours of the Hampshire Club, a pale blue fuselage with a broad dark-blue stripe along it, and aluminium wings and tail unit, is the prettiest colour scheme one has yet seen for a Moth except the King's Cup winner with its red and white enamel, familiarly known as Sir Charles Wakefield's Bath. Somehow the Hampshire machines reminded one of a Sports Morris car.

The independent non-subsidised Aero Clubs had rather hard luck. Flt. Lt. Chick on the Royal Aircraft Establishment Club's Hurricane was only beaten by the width of an airscrew by Mr. Dudley Watt on Sunday. Flg. Off. Boyes on the Seven Aero Club's D.H.53 was suffering from engine trouble and never really got going properly. And the R.A.E. Club's second machine, the Hawker Cygnet, which was presented to them by Messrs. Sopwith and Sigrist, never arrived at all, apparently having fallen out by the way.

SHOW FLYING.

In between races on the Sunday Mr. Bramson gave a very pretty exhibition of flying on one of the Smoke-Writing Corporation's old S.E.s. He made a few smoke rings quite low down, which interested the crowd immensely as it showed how the skywriting is done. And then he proceeded to do some spins and things high up. But he rather lost his effect by going too high up and too far away in his effort to give everybody a chance of seeing the machine without getting cricks in their necks.

Mr. Broad also tumbled about the sky in a most entertaining way in the white and scarlet Bath-Moth.

The one unentertaining number in the programme was a parachute drop by a young woman who has adopted the professional name of "June"—apparently ignoring or disregarding the existence of the Hippodrome favourite. She dropped from an Avro piloted by the ubiquitous Lieut.-Col. G. L. P. Henderson, and judged her drop very well indeed, coming down well in the clear part of the course. Luckily for her she hit the grass and not one of the steeple-chase leaps or one of the barriers, for she was knocked out in landing and was towed for quite a considerable distance by the parachute, if not actually unconscious at any rate not in a condition to pull the cords and spill the air out of the parachute.

These exhibitions are entirely unnecessary, and, as one has always maintained, only pander to the same feeling in the crowd which made gladiatorial shows popular in Rome. People who enjoy seeing a parachute drop always hope that there will not be an accident and feel a little disappointed when there is not. The rest dislike the show heartily, feel horribly nervous before the drop takes place, feel immensely relieved when the parachute opens safely and feel still more relieved when the unfortunate victim, having hit the ground like a sack, stands up and shows that he or she is unhurt.

Such performances are not exhibitions of skill, they are merely a gamble with death. It is all very fine for serving personnel in the R.A.F. to be compelled (morally—though never by order of a senior officer) to do a parachute drop once, because that teaches them what they have got to do in case of an emergency. But exhibition parachuting is not really instructive, and definitely panders to a bad streak in human nature.



INTERESTING THE PUBLIC.—Mr. Dudley Watt taxiing along the course after winning the big race on Sunday.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

However, taking it all round, the Bournemouth Meeting was thoroughly interesting. It was a good sporting effort on the part of everybody concerned, promoters and competitors alike. It was very instructive to the public, and even to the most hardened habitués of aviation. And one hopes that air racing under similar conditions will become popular in the future. The Royal Aero Club has signally failed to popularise air racing but perhaps professional race promoters may be able to make it popular.—C. G. G.

THE THIRD BOURNEMOUTH MEETING.

The show on Saturday and Sunday was in fact the third aviation meeting to be staged at Bournemouth, and it was a very great success. The two previous meetings were the one in 1910 at Christchurch and the seaplane affair held off (very much "off") Bournemouth in 1919.

This one was well organised, and it could be watched in comfort. If one wanted to get from one part of the aerodrome to another one could do it quickly and comfortably without invoking the aid of a motor-car, as there were not the usual vast distances to be covered as there are at such places as Croydon, Hendon, and Lympne. And it does make all the difference to a flying meeting to have these comforts.

One suggests to the R.Ae.C. Committee that it might be worth while to examine Westenhanger Race Course with a view to staging the actual races of the Lympne Competitions there this year. It is only a few hundred yards away from Lympne aerodrome, where the machines could be kept, but far more spectators would be attracted to the more comfortable quarters of the racecourse than to the somewhat bleak aerodrome.

The Bournemouth Authorities removed most of the telephone wires surrounding the flying ground and those that were left were thoughtfully removed by Major Beaumont and a Moth when he was arriving on Saturday. One admired his Imperial air way of blazing the trail by removing obstructions.

Wing Cdr. Sholto Douglas was originally to have flown a Nimbus-Martinsyde, but when he visited the aerodrome earlier in the week he found that the telegraph wires made the approach to the aerodrome very difficult, and so he decided to fly an Avro-Airdisco instead. When he heard the wires were being removed, it was too late to change back to the Nimbus.

One of the most pleasing features of the meet was the high standard of skill shown by the new-comers to Aviation. Particularly noticeable in this respect were Mr. Dudley Watt and Mrs. Elliott-Lynn, who are known at aerodromes, for no very special reason, as "Dangerous Dan" and Mrs. "Ukkl-de" respectively.

One watched Mr. Watt's various starts on Sunday, when the stewards decreed the awkward turning take-off over the crowd, with considerable misgiving. But every time he waited until he had reached a safe height before making his turn. Mrs. Lynn, too, preferred the safe to the spectacular turn, and her three-point landings would have been good for any male pilot. She thoroughly deserved her win in the Club Members' Race.

The finish of the final of the Bournemouth Summer Handicap on Sunday was one of the most thrilling things one has seen, and the large crowd went wild with excitement. The race consisted of four laps of the course, and the starters were Mr. Butler on the D.H. 37, Mr. Watt on the Hawker Swallow, Flt. Lt. Chick on the R.A.E. Hurricane, Messrs. Broad and Hope on Moths, and Wing Cdr. Douglas on the Avro-Airdisco.

Mr. Hope led all the way until the last leg of the last lap. He was being rapidly caught by Flt. Lt. Chick, who was flying very high on the Hurricane, and Mr. Watt, flying very low on the Swallow, was catching the Hurricane. Mr. Hope turned the point first, and then Flt. Lt. Chick started to dive on the line from about 600 ft. Then at the last moment, Mr. Watt, who was flying about five feet off the ground, appeared over a hedge, dashed up the finishing straight, between the rails, swerving to avoid giving the Hurricane his wash, and flashed past the post only a fraction of a second in front of the Hurricane. Mr. Hope was a second or so behind him, and Mr. Broad, Mr. Butler, and Wing Cdr. Douglas were a few seconds behind.

Mr. W. Dancy is certainly to be congratulated on his handicapping of this race in particular and of all the races in general.

Flt. Off. Rex Stocken had a narrow escape when cornering at one of the outside turning points. His wing-tip hit a tree and broke off quite a large branch, and incidentally broke the wing-tip. He felt nothing, and did not know what had happened until he saw the damaged wing on landing at the aerodrome.

When Mr. Bramson, on a skywriting S.E.5a, landed, after giving an exhibition of smoke-screening, Mr. Sidney St. Barbe, with a perfectly serious face, went up to him and said, "Did you notice that a lot of smoke was coming out of your machine?" Such was his serious-

ness that Mr. Bramson for some seconds thought that he must have had something wrong with his aeroplane.

The evening of Saturday was spent in the manner customary at meetings at the Branksome Tower Hotel. It was not so Branksome it might have been, and the explanation appeared on Sunday morning in the *Pictorial*. That journal stated that "Air Vice-Marshal Sir S. Branker, British Director of Civil Aviation, has arrived at Ostia, Palermo and Naples by aeroplane."

Anyhow it was a very enjoyable meeting and one hopes that in three weeks' time we all foregather at the Grand Hotel, Folkestone, for the Lympne week, much of the same spirit will prevail.

Throughout the meeting there was almost constant exhibition of the most noticeable was that on the Avro Gosport by Mr. Bert Hinn who demonstrated that the Gosport is a wonderfully controllable plane. His slow flying and controlled stalls were particularly tactical.

The parachute drops undoubtedly "get" the crowd, even though they may savour of the circus. But one is inclined to think that more the parachute is demonstrated in public the sooner it will lose its terrors and become a usual article of apparel among aviators.

One heard the objection made that there were no new aeroplanes there. Why should there be? A horse-race does not lose interest because there are no new horses at each meeting. Rather does the interest lie in watching the performance of well-tried favourites. One believes that that will be the future of air racing.

[Half the reason for horse-racing is the production and discovery of new horses. The other half is betting. And, without new horses, betting would languish. Also the moral justification for horse-racing is that it encourages the production of new horses, and so improves the breed.—Ed.]

One amusing incident occurred in the Private Owners' Handicap. Dudley Watt should have been easily first and Capt. Geoffrey de Bland second. But somehow or other both parties miscounted the laps and went round again, without crossing the line, to do two and more laps respectively. The result was they were not placed, much to the wrath of those who, through the bookies, had a financial interest in them.

"OH! MY OFFENCE IS RANK."

The following appeared in *The Evening Standard* of Aug. 23:—

"SUNDAY AIR RACES."

"BOURNEMOUTH PASTOR MAKES A PROTEST."

"The Rev. Stephens Rose, in St. Andrew's Presbyterian Church, Bournemouth, said he regretted profoundly that Bournemouth being subjected to Sunday aeroplane racing and parachute descents."

"The Town Council could not stop it, because the venue was outside the boundary. It was hurtful to the feelings of thousands of church-people."

As the reverend gentleman is so hostile should he in future known as a "Roose de guerre"? This non-conformist outlook is to be deplored for we all spent a very healthy Sunday afternoon and feel sure that The Almighty does not in any way disapprove of a harmless afternoon's amusement.

Much worse things happen in Bournemouth on Sunday afternoon and Mr. Rose would do well if he turned his mind to remedying things such as these which occur in his parish rather than interfering with harmless things which are off his beat. Anyhow one saw at least one parson at Ensby Park on Sunday, evidently enjoying himself—but perhaps he was on leave.

PETROL AT BOURNEMOUTH.

Shell spirit was used by the winners of the following events: Instructors' Race, first and second. Christchurch Sprint, first and second. Ensby Park Handicap, first and second. Private Handicap, first and second. Light Aeroplane Club scratch race, first and second.

Mr. Dudley Watt in his great race for the Bournemouth Summer Handicap, used E.P., as did Mr. Alan Butler in the Boscombe Power Handicap.

OIL AT BOURNEMOUTH.

There is no need to go into details of what oil was used, by winners of the various races at Bournemouth. Every single machine which raced there used Castrol, so, as W. Shakespeare said, "it followed as the night the day," that every race was won on Castrol. So once again Sir Charles Cheers.

DOPE AT BOURNEMOUTH.

All machines which won races, with the exception of Mr. Watt's Swallow were doped with Titanine. The Swallow being somewhat ancient it is rather difficult to trace the origin of its dope, though expert opinion inclines to the view that it is Cellon.

G.



THE PRIVATE OWNER.—Mr. Alan Butler on the D.H. 37 (Nimbus) "Lois" winning his heat in the big race on Sunday.



DE HAVILLAND SUCCESES AT THE BOURNEMOUTH AIR RACE MEETING. 10 EVENTS—9 WINS.

SATURDAY, AUGUST 21st.

Light Aeroplane Club Instructor's Race.
1st CAPT. F. G. M. SPARKS ON MOTH.

Boscombe High Power Handicap.
1st Mr. A. S. BUTLER ON D.H.37.

Christchurch Sprint.
1st Mr. W. L. HOPE ON MOTH.

Ensbury Park Low Power Handicap.
1st CAPT. G. de HAVILLAND ON MOTH

Bomb Dropping.
1st CAPT. F. G. M. SPARKS ON MOTH.

SUNDAY, AUGUST 22nd.

Private Club Handicap.
1st CAPT. G. de HAVILLAND ON MOTH

Private Owners' Handicap.
1st Mr. W. L. HOPE ON MOTH.

Light Aeroplane Club Members' Handicap.
1st Mrs. S. C. ELIOTT-LYNN ON MOTH.

Bomb Dropping.
1st CAPT. F. G. M. SPARKS ON MOTH.

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THE
KING'S CUP RACE, 1926
won by CAPT. H. S. BROAD
on a
DE HAVILLAND MOTH.

THE AUSTRALIAN AIR
DERBY, 1926, won by
Mr. ALAN J. COBHAM,
on a
DE HAVILLAND MOTH.



ALL THE WINNERS.

The events at the Bournemouth Flying Race Meeting were flown with the following results:—

SATURDAY, AUG. 21:—

14.00 hours. *The Light Aeroplane Club Instructors' Scratch Race*, open to D.H. Moths (Cirrus engines) from approved clubs. 1st prize, £20; 2nd prize, 10. Ten miles.

G-EBLI (London Aeroplane Club).—F. G. M. Sparks, 1.
G-EBLT (Midland Aero Club).—W. J. McDonough, 2.
G-EBNY (London Aeroplane Club).—S. L. F. St. Barbe, 3.
Also ran: G-EBOH (Hants Aero Club).—G. I. Thomson.

14.30 hours. *The Boscombe High Power Handicap*, for all aeroplanes of 100 h.p. or over. 1st prize, £30; 2nd prize, £10. Ten miles.

G-EBDO, D.H.37 (330 h.p. Nimbus).—A. S. Butler, 1.
G-EBKN, Avro (120 h.p. Airdisco).—Wing-Com. W. Sholto Douglas, 2.
G-EBNE, Avro Gosport (100 h.p. Mono).—Bert Hinkler, 3.

15.00 hours. *The Christchurch Sprint*, for standard Moths (Cirrus engines).—1st prize, £25; 2nd prize, £10.—Ten miles.

G-EBME.—W. Laurence Hope, 1.
G-EBLI (London Aeroplane Club).—F. G. M. Sparks, 2.
G-EBLT (Midland Aero Club).—W. J. McDonough, 3.
Heat No. 1.—Sparks, 1; McDonough, 2; N. Jones (London Club), 3. Also ran: Mrs. Elliott-Lynn. Heat No. 2.—Hope, 1; Mitchell (London Club), 2; Major Beaumont (London Club), 3. Also ran: Flg.-Off. R. H. Stocken (Hampshire Club).

16.14 hours. *The Ensbury Park Low Power Handicap*, for aeroplanes under 100 h.p. 1st prize, £20; 2nd prize, £10. Ten miles.

G-EBNO, Moth (Cirrus II).—G. de Havilland, 1.
G-EBLT, Moth (Cirrus) (Midland).—W. J. McDonough, 2.
G-EBME, Moth, W. L. Hope finished 2nd, but failed to pass one turning point.

Heat No. 1.—G. de Havilland (Moth), 1; McDonough (Moth), 2; Mrs. Lynn (Moth), 3. Heat No. 2.—Hope (Moth), 1; Broad (Moth), 2; Craig (Moth), 3. Also ran: St. Barbe (Moth), Lamplugh (Moth), Chick (Hurricane), Hay (Moth), Flg.-Off. Stocken (Moth).

Bomb Dropping.—Sparks and Craig tied.

SUNDAY, AUG. 22:—

14.00 hours. *The Private Club Handicap*, for any type of aeroplane entered by any recognised club other than approved Light Aeroplane Clubs. 1st prize, £25; 2nd prize, £10. Ten miles.

G-EBNO, Moth (Cirrus II) (British Private Aircraft Owners' Club).—G. de Havilland, 1.
G-EBKT, Moth (Cirrus) (British Private Owners' Club).—Mrs. Lynn, 2.

G-EBHS, Hurricane (Flt.-Lieut. Chick).—Finished 2nd, but failed to pass one turning point. Also ran: A. S. Butler (D.H.37), C. D. Barnard (S.E.C.M.), Dudley Watt (Sopwith Swallow), Flg. Off. Boyes (D.H.53).

14.40 hours. *The Private Owners' Handicap*, for all aeroplanes privately owned. 1st prize, £40; 2nd prize, £20; 3rd prize, £10. Twenty miles.

G-EBME, Moth (Cirrus).—W. L. Hope, 1.
G-EBDO, D.H.37 (Nimbus).—A. S. Butler, 2.
G-EBKT, Moth (Cirrus).—Mrs. Elliott-Lynn, 3.
Also ran: C. D. Barnard (S.E.C.M.), Flt.-Lieut. Chick (Hurricane), Dudley Watt (Swallow), G. de Havilland (Moth), Flg.-Off. Boyes (D.H.53). Watt and de Havilland, who would have been 1st and 2nd, went a lap too many and did not pass the post till the others had finished.

15.30 hours. *The Bournemouth Summer Handicap*, for any type of aeroplane. 1st prize, £100; 2nd prize, £30. (Prizes presented by Sir Charles Wakefield.) Heats, 10 miles. Final, 20 miles.

G-EACZ, Sopwith Swallow (130 h.p. Clerget).—Dudley Watt, 1.

G-EBHS, Hurricane (30 h.p. Cherub).—Flt.-Lieut. J. S. Chick, 2.

G-EBME, Moth (Cirrus).—W. L. Hope, 3.

Heat No. 1.—Butler (D.H.37), 1; Broad (Moth), 2; Sparks (Moth), 3. Heat No. 2.—Watt (Swallow), 1; Wing-Comm. Sholto Douglas (Avro), 2; St. Barbe (Moth), 3. Also ran: Mrs. Lynn (Moth), C. D. Barnard (S.E.C.M.), Lamplugh (Moth), Flg.-Off. Stocken (Moth), McDonough (Moth), Flg.-Off. Boyes (D.H.53).

17.30 hours. *The Light Aeroplane Club Members' Scratch Race*, for approved Light Aeroplane Clubs. 1st prize, £20; 2nd prize, £10. Ten miles.

G-EBLI, Moth (Cirrus) (London Club).—Mrs. Lynn, 1.
G-EBNP, Moth (Cirrus) (London Club).—G. H. Craig, 2.
G-EBNY, Moth (Cirrus) (London Club).—Major K. M. Beaumont, 3.

Also ran: E. L. Brighton (Midland Club).
Bomb Dropping.—Won by F. G. M. Sparks.

THE SOCIAL SIDE OF BOURNEMOUTH.

Personally I started out for Bournemouth with mixed feelings. The weather did not look promising, and air races in bad weather are usually extraordinarily unpleasant affairs to watch. On the other hand, by keeping well off the recognised main road to Bournemouth, I felt assured of a pleasant morning's run, and by putting up for the night a little east of Bournemouth I could count upon a peaceful night and probably upon a pleasant Sunday morning in the quieter parts of the New Forest, which would compensate for the rigour of the actual meeting. But, most delightful surprise, Ensbury Park Race Course—unlike any aerodrome—is not swampy, it is remarkably well drained. And it is properly equipped for the comfort and convenience of spectators.

The organisation of the meeting was good, in that the facilities provided for horse-racing were properly used. Race cards, giving both the registration marks and the colours of the competing machines were provided. Numbers and pilots' names for the starters in each event were hoisted where everybody could see them for each event. The general public could, and obviously did, identify individual machines as they started. Also they were able to follow them fairly easily round the whole of the course.

Best of all the regular finishing straight, right past the enclosures, was used, with the finishing line from judges' box to winning post, so that all the spectators got a really close-up view of the end of each race. And, thanks to the handicappers, some of the finishes were really exciting.

Had the meeting closely resembled certain other events of the same nature very few of the spectators would have come back on Sunday. But evidently they nearly all came back, and brought their friends with them. The bookmakers did quite a large volume of business, by no means all of it with the regular attendants at air meetings. The "bookies" were obviously new to air-racing and professed to have lost appreciably in their dealings, but the odds they were offering were evidently designed on Safety First principles.

It is a long time since so many people paid to watch air-racing in this country, but if they will do it once they will probably do it again—if proper inducements are given.

The meeting took place at the right time and in a suitable place. Bournemouth in August contains a very large population of holiday-makers, few of them of the indigent classes, and most of them ready to spend a little money for their own amusement.

The race-course there is not an ideal aerodrome but it is reasonably satisfactory for machines of moderate power. It is easily accessible by tram or bus from all over Bournemouth and its environs, and all the local inhabitants can direct the visitor to it.

Air-racing is really quite interesting and exciting, but, generally speaking, the spectator has not been allowed to share the excitement. At Bournemouth everybody could know precisely who was doing what, could identify individual machines and watch them gain or lose ground throughout each event, and see for themselves who finished first in each event. And they thoroughly enjoyed it. So did those of us to whom air racing recently has been rather an ordeal.

There has been quite as good racing at a number of other meetings since the War. But usually it has required a good deal of pertinacity and concentration to keep informed as to the progress of events. At Bournemouth one could take one's ease and miss nothing.—W. H. S.

MR. COBHAM'S FLIGHT HOME.

Mr. Alan J. Cobham, who with Serjeant Ward flew from London to Melbourne in 47 days on a De Havilland 50J (Armstrong-Siddeley Jaguar), intends to start home to-day, Aug. 25. He expects to take 17 days for the return flight and so should reach England on Sept. 9 or 10. If he is late his arrival will clash with the Lympne Meeting.

In addition to Serjeant Ward, Mr. Capel, of Armstrong-Siddeley's, will be carried. Mr. Capel only left England in the second week in July, so he must have made a fairly high-speed journey to Melbourne.

Daily papers report that Mr. Cobham won the Australian Aerial Derby and that he has been taking up passengers in a Moth.

MUCH ADO ABOUT NOTHING.

A French Government order recently issued stipulates that if an air line passenger desires to take photographs while flying over France he must apply for permission to do so from the *Service de la Navigation Aérienne*, and a licence will be issued which will only entitle the holder to photograph certain specified areas mentioned in the licence. Otherwise, the pilot or nominal commander of any aircraft flying over French territory shall confiscate all passengers' cameras and keep them in a special compartment under his personal supervision for the duration of the flight.

One recommends the French Government to investigate the possibilities of the Heath Robinson black searchlight or synthetic night for hiding objects in daylight, as it would appear that the air line pilot is already fully occupied with piloting and will have little opportunity to search for vest-pocket cameras in the voluminous impedimenta of the average air line passenger.

Just what the French have got about which to get so excited one cannot imagine. In these days comic fortresses are not worth anything as targets for bombs. One goes for munition factories and industrial areas. And any military attaché knows just where Government stores and workshops are situated in the arsenals and dockyards of the country to which he is attached. So it is merely silly to worry about photographs.



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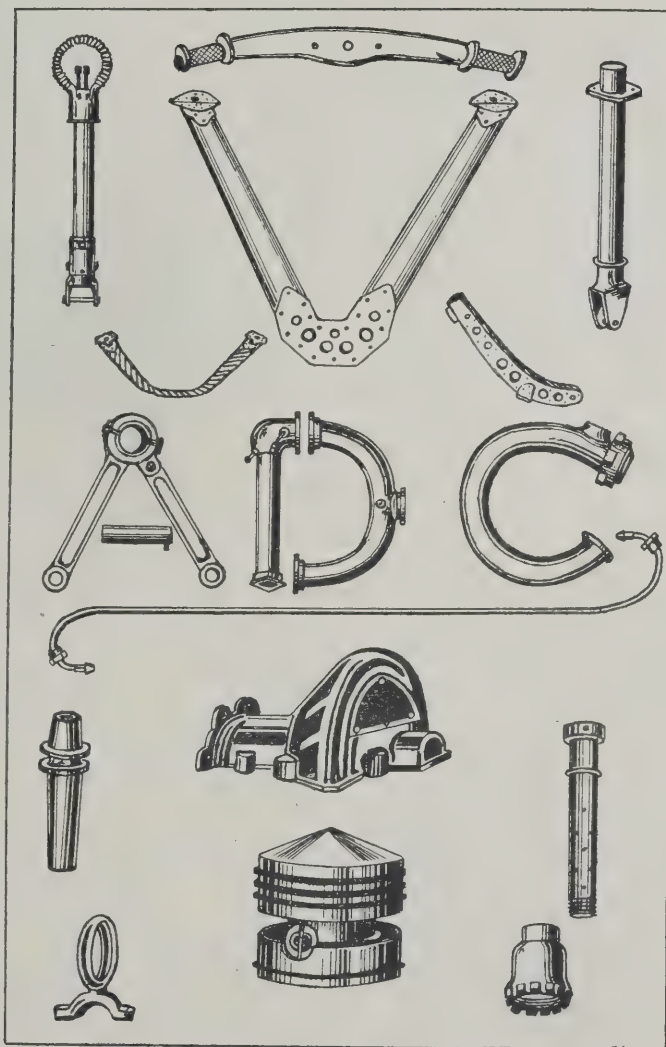


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THE ROYAL AIR FORCE.

The London Gazette.

Aug. 17.

GENERAL DUTIES BRANCH.—The following Flt. Cadets having successfully passed through the R.A.F. Cadet College, Cranwell, are granted permanent commissions as Plt. Offs. with effect from and with seniority of July 30:—W. L. Freebody, R. K. Hamblin, K. S. Brake, L. C. Bennett, E. S. Finch, H. Waring, J. C. Cunningham, W. G. Abrams, R. F. Part, B. C. Yarde, H. H. Martin, G. Stevenson, C. E. Chilton, R. S. Darbyshire, P. H. Jackson, D. N. Roberts, H. A. Purvis, R. P. H. Utley, F. J. Moon.

The following Plt. Offs. are promoted to the rank of Flt. Off:—C. G. Crowden (Apr. 15), R. N. T. Gape (June 30), P. R. Gardner, Earl of Bandon (June 17), A. H. W. J. Cocks (June 17).

The following Plt. Offs. on probation are confirmed in rank:—G. M. Beattie, J. E. A. Binnie, L. S. T. Brown, N. R. Buckle, W. B. Causer, G. R. T. Clarke, A. P. de W. de Wyatt, C. E. Eckersley-Maslin, G. H. Godwin, W. E. W. Grieve, H. R. Hawker, J. E. McC. Henderson, H. E. Milton, P. A. Moritz, A. W. H. Nelson, E. G. Olson, J. H. Pool, H. T. A. Silcox, L. M. Timmins, L. S. Tindall, C. Warsaw, C. D. G. Welch (Sec. Lieut. H.A.C., Infy., T.A.) (July 6); C. P. Ashton-Jinks, W. L. Bateman, P. S. Cook, C. H. L. Evans, F. Gower-Jones, V. G. A. Hatcher, C. S. John, H. C. Johnson, C. G. Lucas, D. Mackenzie, A. F. Merritt, D. H. A. C. D. Patton-Bethune, W. M. Phillips, W. J. Pickard, G. A. Underdown (July 16); R. H. Donkin (July 22); S. H. C. Gray (July 23).

Sq. Ldr. A. S. Maskell is restored to full pay from half-pay (July 30); Flt. Off. R. H. Mahon is transferred to the Reserve, Class A (Aug. 16); Flt. Off. R. G. Chapell resigns his S.S. comm. (Aug. 18); Flt. Off. G. D. B. Russell (Lt. P.W. Vols.) relinquishes his temp. comm. on return to Army duty (Aug. 16). The notification in the Gazette of Apr. 20, 1923, concerning Flt. Off. R. V. Weeks, is cancelled.

MEDICAL BRANCH.—Flt. F. J. Murphy, M.B., is promoted to the rank of Sq. Ldr. (Aug. 7); Flt. Lt. J. A. Musgrave is transferred to the Reserve, Class D/2 (Aug. 17).

RESERVE OF AIR FORCE OFFICERS.—The following are granted commissions in Class A.A., General Duties Branch, as Plt. Offs. on probation (Aug. 4):—I. C. Horton, J. Kennagh.

J. D. Dunville, C.B.E., is granted an honorary commission as a Wing Cdr. (Aug. 17).

The following Flt. Offs. are promoted to the rank of Flt. Lt. (Aug. 17):—J. E. A. Hoare, D.S.C., A. H. Dalton, G. C. Walker, H. P. Dean.

Flt. Off. R. A. Coulthurst is transferred from Class A to Class C (Aug. 17); Flt. Off. J. M. Bell is transferred from Class B to Class C (Aug. 17); Flt. Off. A. G. Lamplugh relinquishes his commission on completion of service (June 19); Flt. Off. H. S. C. Bassett relinquishes his commission on account of ill-health, and is permitted to retain his rank (June 30).

AUXILIARY AIR FORCE—GENERAL DUTIES BRANCH.—The following to be Flt. Offs.:—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—A. G. Lamplugh (Aug. 17). The following to be Plt. Offs.:—No. 601 COUNTY OF LONDON (BOMBING) SQUADRON.—R. Bellville (Aug. 10); J. S. Schreiber (Aug. 14).

Appointments.

Week ending Aug. 23.

GENERAL DUTIES BRANCH.—Squadron Leaders H. P. Lale, D.S.O., D.F.C., to H.Q., Fighting Area, Uxbridge, 7/8. R. B. Mansell, O.B.E., to No. 32 Sqn., Kenley, 3/8. W. H. de W. Waller, A.F.C., to No. 1 School of T.T. (Apprentices), Halton, on transfer to Home Establishment, 26/8.

Flight Lieutenants J. T. Paine, to Station H.Q., Kenley, 1/9. B. A. S. Iewin, to R.A.F. Base, Calshot, 1/9. R. Young, to H.Q., Coastal Area, 9/8. C. T. Anderson, D.F.C., to R.A.F. Base, Calshot, 13/9. W. R. Cox, M.C., D.F.C., to H.Q., Special Reserve and Auxiliary Air Force, 16/8. E. J. A. Burke, to No. 11 Sqn., Netheravon, 4/8. C. D. Palmer, to H.Q., Inland Area, Stanmore, 23/8. L. J. Riordan, A.F.C., to R.A.F. Depot, Uxbridge, 23/8.

Flying Officers W. C. Yale, to No. 2 F.T.S., Digby, 1/9. C. F. Caunter, to No. 25 Sqn., Hawkinge, 1/9. C. G. C. Sullivan, to No. 16 Sqn., Old Sarum, 1/9. J. E. C. Thomas, to R.A.F. Base, Calshot, 1/9. T. Sullivan, to No. 2 Arm. Car Coy., Palestine, 26/7. F. Miller, to R.A.F. Base, Calshot, 5/8. (Hon. Flt. Lt.) R. E. B. Rose, to No. 5 F. I. S., Sealand, 9/8. (Hon. Flt. Lt.) R. F. Carter, to R.A.F. Cadet College, Cranwell, 26/8. E. H. Fielden, to Record Office, Ruislip, 11/8. A. P. K. Hattersley, to No. 2 F.T.S., Digby, 4/8. R. L. R. Atcherley, to C.F.S., Upavon, 4/8. H. E. F. Saunders, to R.A.F. Depot, Uxbridge, 15/6. J. W. Lissett, to No. 23 Group, H.Q., Spittlegate, 17/8. J. W. Hutchins, to Home Aircraft Depot, Henlow, 18/8. C. R. Hancock, and G. W. P. Irwin, to No. 20 Sqn., India, 22/7. T. B. Fenwick, to No. 11 Sqn., Netheravon, 31/8. J. St. C. Arbutnot, to No. 4 Sqn., Farnborough, 13/8. P. N. R. Hallward, to No. 13 Sqn., Andover, 13/8.

Pilot Officers R. W. Holden and J. C. H. Tavendale, to No. 32 Sqn., Kenley, 13/8. N. S. Little and J. W. Bayes, to No. 111 Sqn., Duxford, 13/8. J. C. C. Slater, D. S. E. Vines, A. M. N. David, R. C. H. Monk, E. G. L. Russell and E. A. Swiss, to R.A.F. Base, Gosport, 13/8. E. E. Fallick, C. H. Roberts, T. O'N. East and C. V. Mossman, to No. 4 Sqn., Farnborough, 13/8. H. T. Andrews and G. Bradbury, to No. 41 Sqn., Northolt, 13/8. L. C. Barling and H. A. Howes, to No. 3 Sqn., Upavon, 13/8. C. S. Horne, W. F. Lovering, C. R. McEvoy, W. H. Shorter and D. G. K. Walker, to No. 2 Sqn., Manston, 13/8. A. W. Shaw, to No. 16 Sqn., Old Sarum, 13/8. A. E. Taylor and S. A. Thorn, to No. 17 Sqn., Hawkinge, 13/8. E. M. Thompson and F. B. G. Walker, to No. 56 Sqn., Biggin Hill, 13/8. J. W. M. Nancarrow, to No. 31 Sqn., India, 22/7. H. H. V. Tristram, to A and G. School, Eastchurch, 16/8. B. C. Yarde, to No. 43 Sqn., Henlow, instead of to No. 3 Sqn., as previously notified. P. H. Jackson and H. A. Purvis, to No. 23 Sqn., Henlow, instead of to No. 111 Sqn., as previously notified.

MEDICAL BRANCH.—Flight Lieutenants F. K. Wilson, M.B., to No. 4 Sqn., Farnborough, 25/8 (Hon. Sq. Ldr.) F. W. Squair, M.B., T.D., to R.A.F. Reception Depot, West Drayton, 17/8.

Flying Officers E. J. Mockler, M.B., to R.A.F. Depot, Uxbridge, 17/8. V. J. Jenkins, to Station H.Q., Andover, 20/8.

STORES BRANCH.—Flying Officer C. W. H. Moller, to No. 1 F.T.S., Netheravon, 11/8.

Pilot Officer P. J. Mote, to School of Balloon Training, Larkhill, 11/8. ACCOUNTANT BRANCH.—Flight Lieutenant G. N. Simon, to No. 2 F.T.S., Digby, 11/8.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Dalbandin, Baluchistan, to a Bristol Fighter of No. 20 Squadron, on Aug. 15, No. 326349 L.-AC. William Slater Bolam was seriously injured and subsequently died. Wing Commander John Oliver Archer, C.B.E., the pilot of the aircraft, sustained injury to the spine.

The Air Ministry regrets to announce that as the result of an accident at Camberley, Surrey, to a Bristol Fighter of No. 13 Squadron, Odiham, Hampshire, on Aug. 16, Flt. Off. Theodore Harold James Wright, the pilot of the aircraft, was killed, and Lieut. William Lewis Roberts, M.C., Middlesex Regiment, was slightly injured.

The Air Ministry regrets to announce that as the result of an accident at Brook Down, Isle of Wight, to a Blackburn Dart, of the R.A.F. Base, Gosport, on Aug. 17, John Leslie Llewellyn Rees, Lieut., Royal Marines, Flt. Off., R.A.F., the pilot and sole occupant of the aircraft, was killed.

The Air Ministry regrets to announce that as the result of an accident near Cambridge to a Grebe of No. 19 Squadron, Duxford, on Aug. 18, Flt. Off. Roy Nugent Treherne Gape, the pilot and sole occupant of the aircraft, was killed.

The Air Ministry regrets to announce that as the result of an accident at Hucclecote, Gloucester, to a Gamecock aeroplane of No. 43 Squadron, Henlow, on Aug. 19, Flt. Lt. Hugh Robert Junor, D.F.C., the pilot and sole occupant of the aircraft, was killed.

Flight Cadetships.

The Air Ministry announces that Aircraft Apprentices J. T. Stephenson (Croydon), J. Mutch (Dinnet, N.B.), W. R. Worstell (Swindon), A. L. Weaitt (Bexley), and F. Whittle (Leamington), from No. 4 Apprentices' Wing, Cranwell, and Aircraft Apprentice C. B. Hughes (Deal), from the Electrical and Wireless School, Flowerdown, have been selected for cadetships at the R.A.F. Cadet College, Cranwell, on the results of the examinations held on completion of their three years' training as aircraft apprentices.

Sir Charles Wakefield Scholarships, valued at £75 each, have been awarded to Flt. Cadet H. R. Dale who obtained the fourth place in the recent competitive examination for entry into the Cadet College, and Flt. Cadet J. F. Stephenson.

The Hyde-Thomson Memorial Prize valued at about £33 has been awarded to Flt. Cadet C. B. Hughes.

The Sir Charles Wakefield Scholarship, the award of which was deferred in November, 1925, has now been granted to Flt. Cadet C. E. St. J. Beamish.

Accountant Officers.

In a communiqué dated Aug. 19, the Air Ministry announces certain improvements in the condition of service for Accountant Officers in the R.A.F.

The current rates of pay for the rank of Squadron Leader and upwards have been slightly raised and provision has also been made for promotion of officers to the rank of Group Captain.

The ages for compulsory retirement have also been raised to 53 for a Squadron Leader and 57 for a Wing Commander. The maximum standard of retired pay for the rank of Group Captain is £650 a year.

The new conditions will apply to candidates for commissions who are successful in the examinations next September.

The Fleet Air Arm.

The Times of Aug. 17 states:—

Naval and marine officers attached to the Royal Air Force for service with the Fleet Air Arm who are found medically unfit for duty will normally remain attached to the R.A.F. on full pay sick leave, until one of the following six events occurs:—(1) They are found to be permanently unfit for full flying duties, but fit for general naval duties; (2) if permanently unfit both for full flying and for general naval duties, they have completed any extension of sick leave which may be granted; (3) they are pronounced unlikely to become fit for full flying duties within the current period of attachment, but are found fit for general naval duties; (4) they have completed the maximum period of sick leave admissible under naval regulations and the balance of any ordinary leave for which they are eligible in respect of the appointment held when becoming sick; or (5) they are placed on half-pay on medical grounds, from sickness within their own control; or (6) they have completed the current period for which they are attached, whichever shall first occur.

When these circumstances arise they will be placed at the disposal of the Admiralty and their attachment terminated. Terminations under (1) and (3) will take effect from the date of survey by the naval medical authorities as to fitness for general naval duties.

R.A.F. SPORTS.

Inter-Service Shooting at Bisley.

The following is a list of R.A.F. representatives in the Inter-Services Matches—also honours and prizes won at the above Meeting.

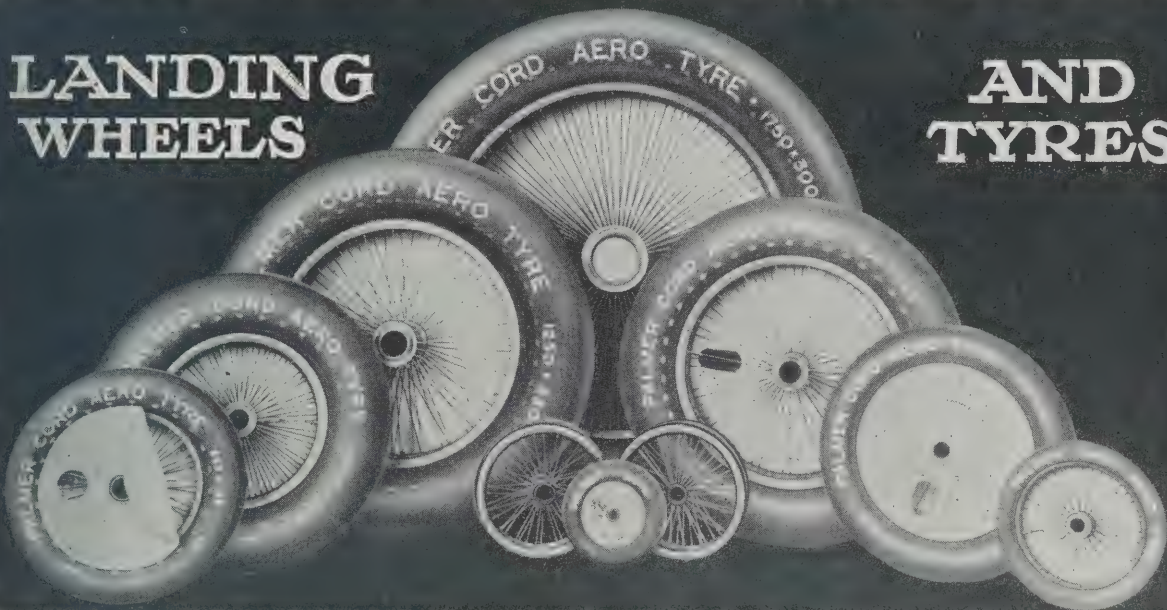


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| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375 x 55 | 168 | m/m 111.12 | m/m 25.4 | m/m Central | 700 x 100 | 112 | m/m 150. | m/m 38.09 | m/m Central | 1000 x 150 | 210 | m/m 185. | m/m 60.32 | m/m Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

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UNITED SERVICES CUP. S.R. (A).

(Flt. Lt. Pearce, Cranwell, Captain.)

L-AC. C. C. Willott, Eastchurch, 167; S-M. S. Hilliard, Halton, 154; AC. E. Cranston, Cranwell, 149; Flt. Lt. W. E. Staton, Felixstowe, 147; Flg. Off. E. M. Drummond, Cranwell, 145; Sjt. Burton, Eastchurch, 142; Flg. Off. O. C. Oldham, Manston, 140; Flt. Lt. A. E. Dark, Eastchurch, 131.—Total, 1,175.

(Reserve: Flg. Offs. Delamain and Jones-Lloyd.)

INTER-SERVICES XX MATCH S.R. (B).—(THE CAMPBELL CUP.)

(Flt. Lt. Pearce, Cranwell, Captain.)

Flg. Off. S. W. Wallingford, Halton, 136; Sq. Ldr. J. Kilner Wells, Woolwich, 135; F-S. R. J. Williams, Cranwell, 133; Sjt. T. Cresswell, Cranwell, 133; Flt. Lt. R. S. Greenslade, Cranwell, 133; Flt. Lt. A. E. Dark, Eastchurch, 131; Flg. Off. J. E. Lissett, Gosport, 131; Sjt. A. Worden, Eastchurch, 118; L-AC. Levell, Felixstowe, 118; Flg. Off. E. J. Wright, Halton, 117; Flt. Lt. J. L. K. Pearce, Cranwell, 130; F-S. C. Spry, Cranwell, 130; Wing Cdr. A. G. Garrold, S'Coll, 128; Flt. Lt. C. Cullen, S'Bury, 128; Flt. Lt. W. E. Staton, Felixstowe, 128; Flg. Off. E. M. Drummond, Cranwell, 127; S-M. West, Manston, 126; F-S. F. Brookham, Cranwell, 122; Cpl. Goude, Gosport, 118; Sjt. Shawcross, Cranwell, 104.—Total 2,526.

THE INTER-SERVICES REVOLVER MATCH.—(THE WHITEHEAD CUP.)

Sq. Ldr. Darley, Halton (Captain), 86; Flt. Lt. Staton, Felixstowe, 66; Sq. Ldr. Hon. R. Cochrane, Andover, 62; Flt. Lt. Pearce, Cranwell, 59; Wing Cdr. Grant-Dalton, Air Ministry, 79; Flt. Lt. Dark, Eastchurch 77; Flt. Lt. Hill, Andover, 79; Flg. Off. Drummond, Cranwell, 76.—Total, 579.

(Reserve: Flt. Lt. Greenslade, Cranwell.)

BARGRAVE DEANE REVOLVER FALLING PLATE COMPETITION.

Teams of three from any unit of H.M. Forces.

Cranwell defeated Small Arms School in 2nd round, beaten by H.M.S. *Excellent* in 3rd round. Halton got as far as semi-final but also knocked out by H.M.S. *Excellent* who eventually won the trophy.

Sq. Ldr. Darley, Halton, won the Granet Revolver Duelling Trophy and several revolvers and spoons.

Flt. Lt. Greenslade, Cranwell, tied for 1st place in the Kinnaird Competition. F-S. Williams, Cranwell, got 3rd place in the Conan Doyle.

INTERNATIONALS.

Flt. Lt. Pearce (Cranwell) again shot with the Irish VIII in the Elcho Shield and with the Irish XX in the National Match, thus giving this Officer his 12th international badge.

Sjt. Cresswell (Cranwell)—a tyro this year—has gained his first international badge, shooting for Wales in the Mc. Kinnon Cup XII and in the Welsh XX in the National Match.

F-S. Williams (Cranwell) also gained his first International honour by shooting for the Welsh XX in the National Match.

THE KING'S HUNDRED.

There were three serving members of the R.A.F. who gained the honour of shooting in the "King's Hundred," for which they received the King's Silver Badge and money prize.

It is interesting to note that these three competitors belonged to the same station, and it is understood that this constitutes a record for any unit of H.M. Regular Forces.

A glance at the list of the King's Hundred for 1926 shows:—Royal Navy 3, Regular Army 2, Royal Marines 1, R.A.F. Cranwell, 3.

The Competitors names and places in the hundred are as follows:—84th, Flt. Lt. R. S. Greenslade; 99th, F-S. R. J. Williams; 24th, Sjt. F. Cresswell (all Cranwell).

The Fighting Area Cricket Competition.

No. 43 Squadron v. Communication Flight, Northolt.—The semi-final round in the above cup competition between No. 43 (Fighter) Squadron, of Henlow, and Communication Flight, of Northolt, was played off at Duxford Aerodrome on Aug. 20, and resulted in a comfortable win for the Henlow Squadron.

An inspection of the pitch pointed to a low-scoring game, and when No. 43 Squadron collected 124 for 9 wickets, it was obvious that they had asked a big question of their opponents. Three of the Squadron wickets fell for 16 runs, but determined hitting by Plt.-Off. Addams (29), Flt.-Lt. Rose (24), Cpl. Hayes (18), and L-AC. Soady (20), enabled a declaration to be made at 124.

Against some very accurate bowling the Northolt batsmen were always fighting for runs, and Cpl. Berry (13) and A. C. Hull (13) were the only players to reach double figures. Flt.-Lt. Rose and L-AC. Bebb were the bowlers to do the damage, as their figures of 5 wickets for 16 runs and 4 for 25 respectively, prove.

Scores:—No. 43 (Fighter) Squadron—Flg. Off. Ryde b Berry, 1; AC. Hammond b Smith, 2; Plt. Off. Addams b Berry, 29; L-AC. Simmonds lbw b Berry, 2; Flt. Lt. Rose (Capt.) b Berry, 24; Cpl. Hayes c Kingsbury b Berry, 18; L-AC. Bebb c and b Berry 7; L-AC. Soady lbw b Kelly, 20; L-AC. Dowland run out, 4; L-AC. Driscoll not out, 6; L-AC. Halls not out, 0; Extras, 11. For nine wickets, declared, 124.

Communication Flight, Northolt—F-S. Kelly c Addams b Rose, 6; Cpl. Berry b Bebb, 13; AC. Smith b Bebb, 2; L-AC. Hull c Hammond b Bebb 13; AC. Rogers b Rose, 0; Cpl. Kingsbury b Rose, 0; L-AC. Taylor lbw b Rose, 5; L-AC. Gear run out, 6; L-AC. Stokes c Halls b Bebb, 0; AC. Parsley b Rose, 0; AC. French not out, 0; Extras 0. Total 45.

PARIS-LISBON-PARIS.

On Aug. 21 Captain Rignot and Serjeant Rossi flew from Villacoublay to Lisbon, and on the following day they made the return trip, covering a total distance of 1,972 miles. On the return trip their average speed was 136 m.p.h.

A SWEDISH TRAGEDY.

At the conclusion of the Swedish Army and Navy aerial manoeuvres a display of parachute descents was held over the military parade ground at Stockholm. Five jumps were made from five aeroplanes and of these five, two parachutes failed to open, resulting in the death of both jumpers, and a third just opened near the ground, but not in time to prevent the jumper from breaking both legs.

The type of parachute used by the Swedish Army is of German origin.

On behalf of British aviators one tenders to our good friends of the Swedish Army and Navy the deepest sympathy in this tragic happening. Parachutes are essential in any Flying Service, and it is necessary that Service personnel should do parachute jumps so as to accustom themselves to the action of the equipment. But there is real tragedy in such an event as this occurring at the end of a successful and encouraging series of aerial manoeuvres.

A PARACHUTE ADVENTURE.

On June 17, Lieutenant J. T. Hutchinson and Mr. P. Stanley, test observer, were flying a Huff-Daland L.B.-1 bomber (800 h.p. Packard engine), when at 8,000 feet a leaking petrol pipe exploded, blew off the cowl and fireproof bulkhead, and allowed the flames to invade the cockpits. Mr. Hutchinson vainly endeavoured to switch off, but was forced out onto the plane, and subsequently both men left the machine in their parachutes.

The controls of the L.B.-1 were set for level flight with one wing slightly down, and when Mr. Hutchinson's parachute had opened he found that he was in the centre of a path about which the bomber was circling. Mr. Stanley, having jumped first, got clear away.

The machine was well alight, and had on board 320 gallons of petrol, 2,000 rounds of live ammunition, and six bombs. For several thousand feet the machine and pilot descended together, the ammunition spluttering like "pop-corn."

Mr. Hutchinson tried to sideslip his parachute, but without success. Finally, so much of the superstructure burned away that the machine dropped slightly and left the pilot clear.

The machine continued to circle round until it landed, naturally without flattening out, and on contact with the ground the petrol tank exploded. Another pilot, who was flying in the opposite direction, met the flaming machine and followed it until it landed, expecting to find the crew still on board. The two members of the crew landed some two miles away, and were none the worse.

INDIA AND THE SOVIET.

With reference to the quotations from *The Morning Post* and *Hansard* which appeared in *THE AEROPLANE* of Aug. 4, the following letter from M. Yunus, Secretary of the Afghan Legation, has appeared in the daily press:—

So much that is irrelevant has been lately commented on in the Press in this country in respect of the Afghan Air Force that it, perhaps, urgently calls for a brief explanation.

To begin with, the number of our aeroplanes is too small to need any mention or apprehension. It is true that the Afghan Government have employed a few Russians, Germans, and other Europeans as pilots and mechanics; but that does not imply any ulterior motives, for the Afghans themselves control the Air Force; and the Russians are employed just as any other Europeans are taken into service.

The question of reductions or no reductions in the Indian Budget relating to the Army Estimates should not be mixed up, as has been done by some newspapers, with the purely defensive measures adopted by Afghanistan.

The Afghan Government earnestly desire to live in peace with their neighbours, with whom their relations at the moment are quite friendly; but surely the Afghans cannot be used as a catspaw against either of their neighbouring States.

AGISTMENT IN NORTH-WESTERN QUEENSLAND.

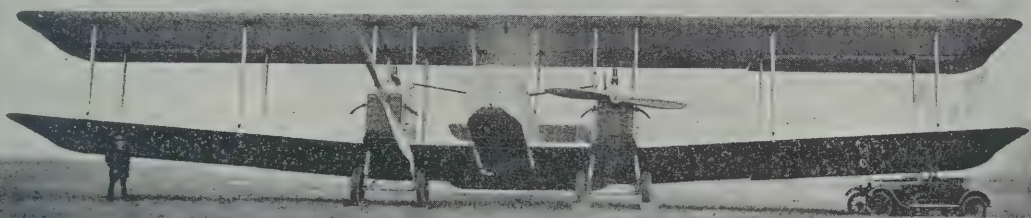
The value of Air Transport for finding agistment, or relief country, for stock, during periods of drought, has been proved by the experience of Mr. Fergus McMaster, a property-owner in the Winton district of North-Western Queensland.

Mr. McMaster left Winton at midday on Feb. 25 and arrived in Cloncurry by the air mail at 3.30 p.m. on the same day. At Cloncurry he met one of his managers and hiring a special "taxi-plane" they flew to Normanton. From Normanton they had to travel 40 miles by motor-lorry to view the property. By 4.30 on Feb. 26 the party had returned to Normanton, having completed arrangements for the agistment of 30,000 sheep.

Mr. McMaster spent the rest of the day in making inquiries which resulted in another block of 80,000 acres being secured. This block of country was inspected from the air before breakfast. On Feb. 27 much useful information being gathered, the party returned to Cloncurry and spent the rest of the day completing the arrangements.

Mr. McMaster was back again in Winton by 9 a.m. on Feb. 28 having covered 930 miles in under three days and in ten hours' travel time. The journey saved six days and was accomplished at less cost than by hiring a car.

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CIVIL AVIATION 1925-1926.

The annual report of the Controller-General of Civil Aviation for the year ending Mar. 31, 1926, shows steady progress on the part of civil aviation towards commercial success. That progress is perhaps less rapid than might be desired can to some large extent be attributed to the fact that civil aviation, both in this country and abroad, is largely under official control and is therefore subject at intervals to suddenly introduced, even if long debated, changes of policy and variations in method of operation.

In the year 1924/25 the British Air Transport Services quite distinctly lost ground owing to the disturbances which marked the inauguration of Imperial Airways. On the basis of machine miles flown, they would appear again to have fallen back this year, but owing to the newly introduced subsidy basis of horse-power miles, the use of larger machines has been encouraged, and the smaller machine mileage has actually carried a larger number of passengers and very nearly the same total of goods. It may, however, fairly be considered that the period dealt with in this report is still suffering from the effects of reorganisation, and the evidence available suggests that the next annual report will show a very marked increase in both goods and passengers carried on the Continental routes by British machines. It is gratifying to notice that British aircraft once again carried more than half the total air passengers between London and the Continent. The essential figures for traffic carried by Imperial Airways in this and the preceding year are:—

Number of flights: 1924/5, 4,667; 1925/6, 4,461. Mileage: 1924/5, 890,000; 1925/6, 865,000; Passengers: 1924/5, 13,478; 1925/6, 14,675. Goods: 1924/5, 508 tons, 1925/6, 456 tons.

The total value of goods other than bullion and specie imported and exported by air is returned at £1,972,972, as against £1,328,395 for 1924/5. Bullion and specie of the value of £11,140,589 was exported, and of the value of £188,240 was imported. Thus air transport is gaining a large share of the transport of really valuable goods for which it is especially fitted. Unfortunately the share of these totals carried by British aircraft cannot be discovered, these figures including imports and exports by foreign aircraft.

In Civil Flying other than by Imperial Airways—which comprises joy-riding, survey and photographic flying and other types of flying for hire and reward—there is a reported increase of nearly 50 per cent. over the previous year, the figures being:—

Number of flights: 1924/5, 23,519; 1925/6, 33,433; Mileage: 1924/5, 139,000; 1925/6, 169,000. Number of passengers: 1924/5, 43,766; 1925/6, 67,329.

No accident resulting in death or injury occurred in civil flying during this year, and there were only five cases of damage to machines notifiable under the Air Navigation Regulations. Three of these occurred to members of flying clubs, two of them during the pilot's first solo flight.

Of a total of 4,179 scheduled flights begun by British machines, 3,888, or 93 per cent. were completed without interruption. This is a slight drop from the previous year, when 94 per cent. were uninterrupted. A little over half the attempted flights (148 out of 291) were completed on the same day.

The 291 interrupted flights account for 326 involuntary landings—some flights being interrupted more than once. Of these 326 landings, 169 are ascribed to weather conditions, 108 to engine or installation failure, and 49 to other reasons undisclosed. There is a slight increase in the number of involuntary landings over the previous year, on a slightly smaller total of scheduled journeys, and this increase is about equally divided between interruptions due to weather and to engine or installation failure.

In this connection it should be remembered that a considerable number of new machines, all of them with more than one engine, came into service in the year in question. Pilots are naturally and rightly less ready to fly unfamiliar than well-known machines, through bad weather, and the more engines a machine possesses the greater the probability of engine breakdown. The added safety of multiple engines is therefore paid for by some decrease in reliability. Fortunately, this decrease is apparently very small, and the increased number of interrupted flights which were completed on the same day suggests that on more than one occasion the pilot with one, or two, or more engines defective, was able to reach an aerodrome where the defect could promptly be rectified, whereas with only a single engine and a similar defect, he would have been forced down in conditions which would have meant abandoning the flight.

During the period under review, £3,850 was paid by the Air Ministry to the five active flying Clubs in the form of maintenance grants, and the Ministry became responsible for 50 per cent. of the cost of replacement of two Moths written off as the result of accidents. In addition nine club members qualified for "A" licences and their clubs for the grant of

a sum of £10 for each member so qualified. (The number of "A" licences secured by Club members since April 1, 1926, is of course not included.)

The most important development of the year in Great Britain in connection with Air Survey was the experimental survey carried out by the Aircraft Operating Company, near Eastbourne, under contract from the Ordnance Survey Office. Some account of this work has already appeared in this paper. Experiments are being made with various methods of plotting from these photographs, and the authorities are not yet prepared to publish conclusions as to the relative efficiency of air and ground methods for the revision of accurate large-scale maps. But it is admitted that in some types of country there is a definite advantage on the side of the air method, and that detail can be plotted to the required order of accuracy from aerial photographs.

Aerofilms, Ltd., which is a subsidiary of the Aircraft Operating Co., carried out over 150 hours of photographic flying. They have photographed the whole of London (over 100 sq. miles) for the purpose of making a new map, and have photographed an estuary at high and low tides, in connection with the preparation of plans for a hydro-electric power scheme. The Thames Conservancy have also employed aerial photographs to assist in the preparation of plans for the construction or reconstruction of bridges. Work for various estate agents has also been in demand.

The Surrey Flying Service and the Central Aerophoto Company have each taken over 2,000 aerial photographs for industrial and advertising purposes.

The Air Survey Co. Ltd., although operating out of Britain, is nevertheless entirely British and its operations are therefore rightly included in the report. During the year they photographed 1,350 sq. miles of land in the Miri oilfields of Sarawak. From the 2,000 photographs thus taken a general map of the district to the scale 1/50,000, and maps, to a larger scale, of the rivers, are now being made. A further contract for the photography of 1,760 sq. miles, has since been placed with the firm by the Sarawak Government, and the Government of the Federated Malay States has also made an experimental contract with the Air Survey Co. for the photography of 400 square miles of their territory.

R.33, after an interruption caused by its breakdown from the mooring mast, completed the pressure-plotting tests required in connection with the designs of the new airships in the autumn of 1925. The intended reconditioning of R.36 was abandoned from motives of economy. Preliminary constructional work on R.101 has been started, and the main hull girders are due for delivery this summer. At Cardington and at the Egyptian base, the mast structures for the new airships are complete, up to the mast-head, and the enlargement of the Cardington shed is practically completed.

The rebuilding and enlargement of Croydon Aerodrome was begun during the year, and an estimated sum of £134,000 was provided for this and for the diversion of Plough Lane involved in the scheme. Work towards providing night-flying facilities on the Continental route was confined to minor modifications to existing lights. Various high wireless masts have been equipped with signal lights, and it is proposed to fit a special form of Neon beacon in the areas covered by such masts.

It was decided to equip Croydon with sunk Neon lights, and arrangements were made for full-scale tests of the Leader Cable at Farnborough with a view to eventual installation at Croydon. Experiments are in progress with wireless D.F. gear for night-flying aircraft, and also with a Wireless Beacon which will permit the pilot to steer directly on to the transmitting station from any position.

The report refers briefly to a number of new aircraft engines and instruments—most of them familiar to readers of THE AEROPLANE. Among these are the Auto-giro, the Bramson Anti-Stall Gear, and the Jupiter and Jaguar air-cooled radial engines—which latter are only new to Civil Aviation. It is stated that the small three-engined machine with three Bristol Lucifer engines, mentioned in last year's report, is now under construction by Handley Page Ltd. The large, all-metal boat seaplane forecasted last year has been abandoned, but another all-metal flying-boat with three Jupiter engines is being considered instead.

The de Havilland 54, or Highclere, is being fitted with Gyro rudder and automatic aileron control, and various experimental wireless equipment, and is to be handed over to Imperial Airways for test under practical operating conditions.

After dealing in detail with British civil flying, the report gives a brief summary of the year's events in the Dominions and principal foreign states. The impression on the whole is that civil aviation throughout the world is growing slowly but unmistakably in volume and importance, and is gradually approaching the self-supporting condition.

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CIVIL AVIATION IN CANADA.

The report on Civil Aviation in Canada in the year 1925, issued by the Department of National Defence, shows a continued steady progress in self-supporting civil aviation. Canada is in the position of possessing no subsidised air services. Direct Government assistance to Aviation is limited to the provision of a small number of public aerodromes and to the detailing of certain units of the Royal Canadian Air Force to duties such as forestry patrol and aerial survey work.

This use of Service aircraft serves a multiple purpose. It provides the personnel with valuable experience and training, it performs valuable public service at a marked saving in time and in cost, and it has served, and doubtless is still serving, as valuable propaganda, and has already led to the formation of civil air services owned by the provincial authorities in Quebec and Ontario, and to the formation of a number of commercial undertakings carrying on work of a similar nature.

During 1925 sixteen firms in Canada owned and operated 39 aircraft, of which 27 were seaplanes, 1 amphibian, and 11 land machines. These machines made 3,171 flights, totalling 255,826 machine miles, and carried a total of 8,068 persons and 593,300 lbs. of goods and mail. ("Goods" includes in some cases fire fighting appliances, etc., and is not necessarily freight in the usual sense of the term.) There were no accidents causing injury to personnel during this period.

These statistics show a slight decrease both in mileage and in flying times from those recorded in 1924. This decrease is due mainly to the closing down of the Laurentide Air Service Ltd. during 1925. This firm did a large amount of pioneer work in Ontario, and obtained a good deal of business under contract from the provincial government, which, however, has now formed its own Air Service and carries out forest fire patrol and survey work with publicly-owned equipment mainly purchased from the Laurentide concern.

As an offset to the cessation of the Laurentide Service a new firm, Brock and Weymouth of Canada Ltd., has entered the field. This is an offshoot of the firm of Brock and Weymouth Inc. of Philadelphia, who have developed a system of mapping from stereoscopic vertical photographs which it is claimed is particularly valuable for industrial survey purposes. The firm carried out two important surveys during the year. The first was a survey for the location of a new branch railway from O'Brien to the new Rouyn goldfields, a distance of some 50 miles. This survey was carried out while snow was still on the ground and the lakes frozen, and the aircraft used operated without a shed or other shelter.

The Chief Engineer, Construction Department, Canadian National Railways, in a report on this survey, shows himself to be very strongly impressed by the capacity of this method to produce rapidly accurately contoured maps under favourable conditions.

The firm also made a survey near Chicoutimi in connection with the Saguenay water-power scheme. Altogether the operations by this newcomer during the year amounted to 47 hours' flying, in which 167 square miles were photographed and subsequently accurately mapped.

The Dominion Aerial Exploration Company, founded by Capt. Quigley, continued to operate the Rohewal Air Station under contract from the provincial government of Quebec, and to carry out forest exploration, photography, reconnaissance and fire patrol for the government to the extent of 133 hours' flying. Over and above this the firm did a considerable amount of other work, including transport of supplies of all kinds for a large survey party on the North shore of the Gulf of St. Lawrence, two large forest mapping operations for timber firms, and regular forest patrols for Price Bros. Ltd. At the end of the season the firm took over the Three Rivers Air Station formerly used by the Laurentide Air Service.

The Fairchild Aerial Surveys Co. (of Canada) Ltd. continue to extend their business. In 1925 they flew 268 hours, covered 1,400 square miles with oblique and vertical photography, and type-mapped 3,000 square miles of forest.

Northern Air Services Ltd., of Haileybury, Ontario, was formed in the spring to continue the air mail, goods and passenger service from Haileybury to the Rouyn goldfields, formerly operated by the Laurentide firm. Mr. B. W. Broach, formerly a Laurentide pilot, is managing director and chief pilot. The firm made 212 flights, carried 503 passengers and 22,580 lbs. of goods and 1,030 lbs. of mail.

A number of smaller concerns carried on divers operations, among the more notable being a prospecting and exploring trip in North British Columbia and the Yukon, by Lt.-Col. Scott-Williams and Mr. C. S. Caldwell. This work was carried out by arrangement with the Laurentide Air Service on that firm's Viking.

Mr. Caldwell was also concerned in the sealing trip made by the Antarctic Avro with a sealing fleet from Newfoundland which was eminently successful. There is also recorded

a certain amount of joy-riding, exhibition flying and so forth by various individuals on a scale in excess of any such work recorded since 1921, and the opinion is expressed that interest in the possibilities of organised air routes has been awakened by recent developments in the U.S.

The Provincial Air Service of Ontario now owns 19 flying boats, and flew over 2,700 hours during the summer months. More than half of this was for fire protection purposes. Six thousand square miles of forest were sketched and 600 square miles photographed.

Late in October when regular work for the season had ended a flying meeting under the auspices of the Provincial Air Service was held at Saulte Ste. Marie. This meeting was the first of its kind to be held in Canada and was eminently successful.

CIVIL WORK BY THE R.C.A.F.

Vancouver Seaplane Station flew a total of 349 hours on civil services, including 297 hours on fishery patrols, 27 hours on Customs patrols. The remainder of their work included flights for White pine "Blister rust" control, an examination of Graham Island for the Soldiers' Settlement Board, and a small amount of flying for the Dominion Forest Service.

High River (Alberta) Air Station is essentially for forestry purposes, and spent 493 hours on patrols and fire protection service. All their forest patrol craft carry wireless with a range of 200 miles and their base is linked to the Forest Service land lines. Fire warnings can there be transmitted almost instantaneously from the aircraft to the nearest ranger station. Over 160 hours was employed in photography, covering 8,600 square miles. This was far short of the programme originally laid out for the season, as the weather was very unsuitable during the greater part of the season. The quality of the work completed was, however, excellent.

In Manitoba, working from a base on the South end of Lake Winnipeg and sub-bases at the North end of the lake, at Norway House and at the Pas, 1,486 hours were flown, of which 848 hours were on fire patrol and fire fighting duties, 300 hours on photography for the Topographical Survey Branch, and 48 hours on various public transport services. A small number of flights were made for commercial interests and a number of ill or distressed individuals were rescued by pilots in the course of normal flights.

The Ottawa Station—now at South March, Lake Deschenes—carried out experimental work of various kinds, including tests of the Vickers Vedette and Varuna. In addition a certain amount of civil work for various Government Departments was based here. This included aerial photography and transportation—mainly the former.

Dartmouth Air Station flew about 70 hours for civil purposes and continued the oblique photographic survey of the Nova Scotia peninsula. Unfortunately bad weather seriously interfered with this work. Some progress was made, but the results are described as disappointing—presumably as regards quantity or area covered. Altogether, Canada may be congratulated on possessing Civil Air Services which are an asset to the country and not a public liability.

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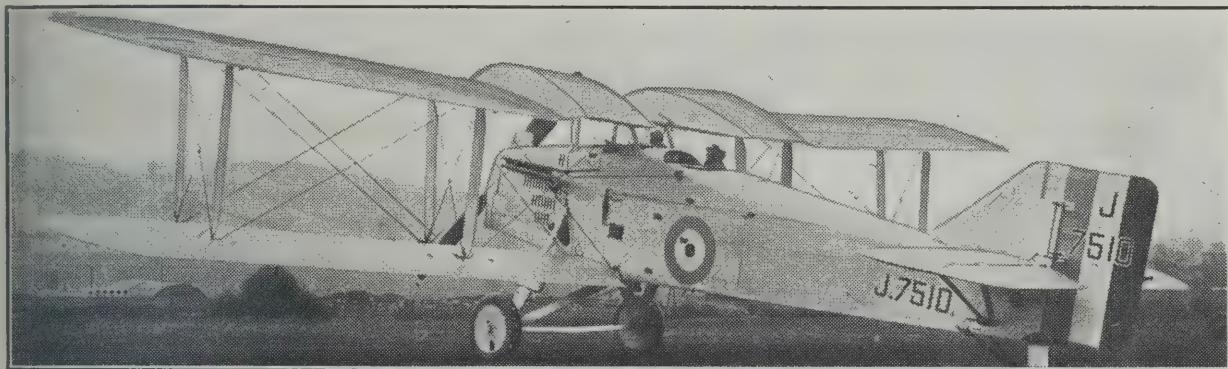
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MORTGAGES AND CHARGES.

LIGHT PLANES (LANCASHIRE), LTD.—First debentures dated July 29, to secure not more than £2,000, charged on such of the property of the company purchased in whole or in part, with money supplied by the President of the Air Council, under an agreement dated June 2, 1926, or with monies received by virtue of any insurance (other than third party or Employers' Liability Insurance) affected by the company under the said agreement. Holder: President of the Air Council.

YORKSHIRE AEROPLANE CLUB, LTD.—Debenture dated July 28, to secure all sums not exceeding £2,000, which may become due under an agreement dated June 13, 1926, charged on such of the company's property, present and future, as may have been or may be purchased in whole or in part, either with money supplied by the President of the Air Council under the provisions of an agreement made with the said President, or with money received by virtue of any insurance (other than third party or Employers' Liability Insurance) affected by the company under the provisions of the agreement, and also all money to be received by the company by virtue of any such insurance as aforesaid until the same shall have been laid out by the company (in making good the loss or damage in respect of which it is received) in accordance with the provisions of the agreement. Holder: President of the Air Council.

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THE photograph is of the Yeovil Day Bomber, one of the latest machines built at the Westland Aircraft Works. It marks an important stage in the development of this type of aircraft possessing among its other features of superiority a good view for pilot and observer in all directions, stability (for accurate bombing), gravity feed of petrol from tanks in upper plane, and oleo-rubber undercarriage with wide track. It has a Rolls-Royce Condor Engine of 670 h.p. with Leitner-Watts metal propeller. The performance of the machine which was built for the Air Ministry is highly satisfactory.

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THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Thursday, Aug. 19.

The total flying time up to the 19th was 19 hrs. 50 mins.

The following members had flying instruction:—O. E. Martin, Miss O'Brien, A. Southgate, C. K. Tutt, G. H. Craig, R. Malcolm, Major K. M. Beaumont, J. P. Simson, F. C. Elford, A. J. Richardson, H. Solomon, E. A. Lingard, V. H. Doree, E. D. Moss, G. E. Clair, R. C. Woodcock, D. L. Stalley, A. L. A. Petty, H. F. Wight, C. E. Murrell, W. Hay.

The following members flew solo:—W. Hay, Major K. M. Beaumont, Miss O'Brien, Sq. Ldr. M. E. A. Wright, R. Malcolm, O. J. Tapper, E. D. Moss, E. S. Brough, G. H. Craig.

Joy-rides were given to Mrs. Lamplugh, Mrs. Lohmeyer, Mrs. Wright, G. W. West.

Bournemouth Race Meeting.—The London Aeroplane Club won the Pilot Instructors' Race (P. G. M. Sparks), and the Light Aeroplane Club Members' Scratch Race (Mrs. Elliott-Lynn). In the Bomb-Dropping Competition F. G. M. Sparks and G. H. Craig tied on the first day and Mr. Sparks was again successful on the second day.

The Lancashire Aero Club.

Report for week ending Aug. 21:—

The weather has been exceptionally bad, rain, and strong winds, at times reaching gale force, have ruled almost every day.

Mr. Stack gave instruction to:—Messrs. Costa 2 hrs. 35 mins., Nelson 1 hr. 10 mins., Wade 50 mins., Fallon 45 mins., Collinson 35 mins., Heys 30 mins., Fray 30 mins., Pitman 25 mins., Foxcroft 25 mins., Leigh 25 mins., Anderson 15 mins. Total 8 hrs. 20 mins.

Mr. Cantrill gave instruction to:—Messrs. Shires 30 mins., Hay 10 mins. Total 40 mins.

Solo flights by:—Messrs. Leeming 2 hrs. 15 mins., Hardy 1 hr. 30 mins., Michelson 45 mins., Goodfellow 35 mins., Agar 35 mins., Leete 20 mins. Total 6 hrs. 20 mins.

Tests occupied 1 hr. 20 mins.

Total hours flown during week 16 hrs. 40 mins.

Mr. Hardy made the required flights for his certificate on Tuesday. The machines in use have been LV and MQ (Moths) and OK (No Renault Avro). I.R. is being overhauled.

The Gosport, except for an occasional test, is not flown, and until a new engine is obtained it will probably remain unused. The present engine is too erratic to trust with anyone but a highly-skilled instructor flying within gliding distance of the aerodrome.

THE NEXT PAGEANT.—The Lancashire Aero Club announce that they will hold their second flying display at Woodford Aerodrome, near Wilmslow, on Sunday, Sept. 26, at 2.30 p.m.

The programme includes Air Races, Formation Flying, Aerobatics, and displays of Bomb-dropping, Fighting in the Air, and an attack on a Mine-layer.

Admission to the aerodrome will be 1s.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Aug. 22.

Bad weather continued throughout the week, and flying was possible on only three days.

Total time, 14 hrs. 15 mins., all on LY (IX being off service for overhaul and renewal of C. of A.). Dual 12 hrs. 30 mins. Solo, and "A" Pilots, 1 hr. 45 mins.

The following members flew under instruction with Mr. Parkinson:—Messrs. Gilmore, V. S. Davidson, J. M. Davidson, Thirlwell, Bruce, Middleton, H. Ellis, Turnbull, E. C. Kennedy, J. Y. M. Kennedy, Prendergast and Mrs. Mareks.

Dr. Dixon flew solo.

Mr. N. S. Todd flew with Mr. A. Bell as passenger.

Mr. C. Thompson flew with the following as his first passengers:—Mrs. Thompson, Mr. Thompson, Mrs. Ridley and Mr. L. Smith.

Mr. Graham and Mr. Goodbody had joy-rides with Mr. Parkinson.

THE FIRST ANNUAL FLYING MEETING:—This will be held at Cramlington Aerodrome on Saturday, Sept. 4:—

The following is the programme of events:—(1) *Exhibition Flying* by Mr. H. S. Broad, A.F.C. (2) *Inter-Club Instructors' Race*. (Scratch. Length of course approximately 20 miles.) (3) *Private Owners' Race*. (Scratch Race, unless any entrant flies a machine other than a Moth.) (4) *Open Handicap*. (Machines handicapped according to R.Ae.C. Formula.) (5) *Exhibition Flying* by a Member trained by the Newcastle Aero Club. (6) *Inter-Club Relay Race*. (Three Members from each Club, including Instructor, if necessary. Take-off from Starting Line on First Lap. 2nd and 3rd laps—machine left into wind where it comes to standstill and next Member takes off from that position.) (7) *Landing Competition*. (Shortest Pull-up over given line. Engine must be shut off, on throttle, at not less than one hundred feet. Marks given for method of approach, etc. Open to Club Pilot Instructors and "A" Licensed Pilot Members with over 20 hours' solo flying. Not more than three entries per Club.) (8) *Bomb-dropping Competition*. (Two entries maximum per Club. Three bombs per entrant. Nearest to given mark on aerodrome. Bombs not to be dropped at a height less than one hundred feet.) (9) *Inter-Club Members' Race*. (Open to one Member from each Club, trained wholly by their respective Clubs. Scratch Race, but starting at half-minute intervals.)

If it can be arranged to the convenience of competitors, it is proposed to hold an "On to Cramlington" Race. This will take the form of an handicap race, timed from the competitor's own aerodrome, or from some landing ground nearer to Cramlington. The De Havilland Co. have very kindly offered to carry out the handicapping. It will greatly facilitate the arrangement of this race, if intending entrants will notify their club of their intention.

All machines should be on the aerodrome by noon on the day of the race, and in arranging the above race, efforts will be made to arrange the starting times to allow of this.

The Midland Aero Club.

Report for week ending Aug. 21.

Very stormy weather throughout the week has considerably restricted flying. The total flying time was 8 hrs. 10 mins.

The following members had instruction:—J. Brinton, E. J. Brighton, C. H. Burrows, R. L. Jackson, H. Smith, S. H. Smith.

The following members made solo flights:—C. L. Knox, R. L. Jackson, E. J. Brighton, G. H. Perry.

Mr. McDonough being at the Bournemouth Aviation Meeting, no tuition work was done over the week-end. The machine sent to Bournemouth put up a consistent performance, but suffered from a "woolley" engine which had only been installed after a complete overhaul two days before the Meeting.

Mr. E. L. Brighton in the Pupils' Race, made an excellent and spectacular "get-away" which gave him a lead of about half a mile though he unfortunately lost this by missing the first turning point. Mr. McDonough took second place in the Instructors' Race.

The Hampshire Aeroplane Club.

Report for week ending Aug. 21.

Total flying time, 10 hrs. 33 mins. Instruction flying, 7 hrs. 47 mins. Passenger flying, 2 hrs. 46 mins.

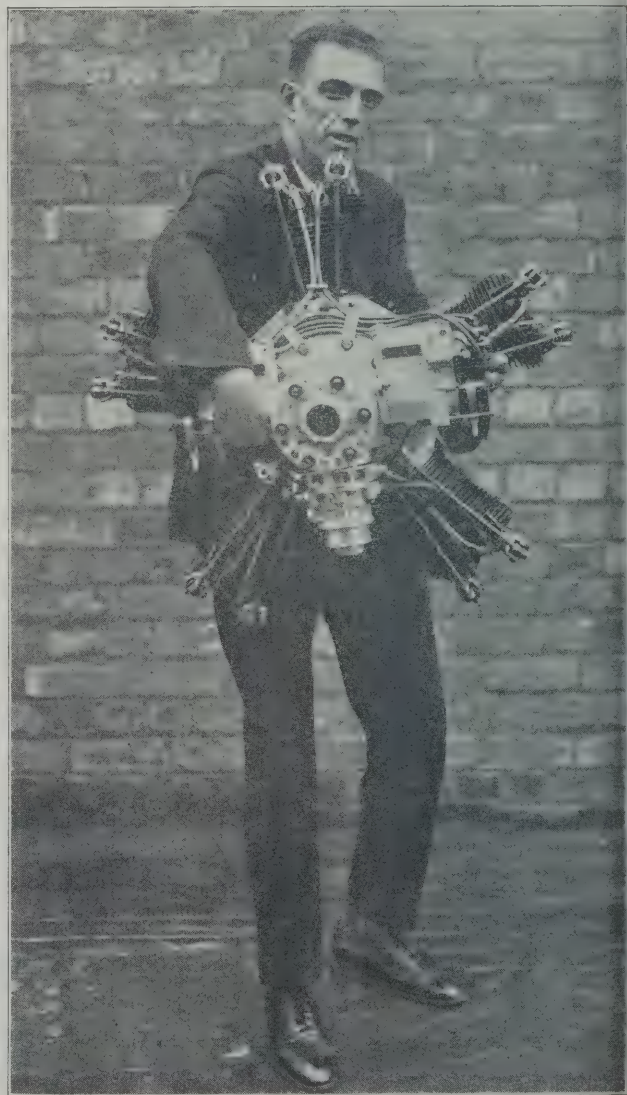
The following members had instruction:—Messrs. Perfect 1 hr. 30 mins., Fry 1 hr. 20 mins., Bound 1 hr., Nicholson 30 mins., Burry 22 mins., Dobson 20 mins., Southcliffe 20 mins., Keeping 20 mins., Kerry 15 mins., Sommer 15 mins., Courtenay 15 mins., Cooper 5 mins., Wing Cdr. Wyllie 15 mins., Major Jenkins 45 mins., Flg. Off. Clarkson 5 mins.

The following members had passenger flights:—Miss Hewitt 7 mins., Mrs. Smith 10 mins., Mrs. Potter 10 mins., Messrs. Kelly 12 mins., Thake 12 mins., Gaston 12 mins., Pipe 12 mins., Taleron 14 mins., Belleville 10 mins., Salter 7 mins., Miss Edward 10 mins.

On Saturday, Aug. 21, G-EBOH and G-EBOI were flown to Bournemouth for the race meeting, Mr. Thomson flying "Gee-bo" with Mr. R. V. Perfect, the Club's Hon. Assistant Sec., as passenger, and Flg. Off. R. H. Stocken flying "Gee-boy" with Mr. McCracken, ground engineer to the club.

Mr. Thomson flew "Gee-bo" in the Instructors' Race, and led the field in the manner of the Duke of Plaza Toro. He then flew back to Hamble in "Gee-boy" to carry on with instructing, and Flg. Off. Stocken flew "Gee-bo" in the Christchurch Sprint Race.

Mr. Stocken decided to turn this race into a botanical ride, and perceiving a rare species of "Quercus robur pedunculata" known to "Hoi Polloi" as an oak, he proceeded to plunge into its foliage. Very fine specimens were obtained on the lower port plane and under-carriage, and having satisfied himself on this point, he joined once again in the race. This passion at a certain service station for the "extra leaf" is a most interesting phenomenon.



"VICE VERSA."—Here the Armstrong-Siddeley Genet engine is seen being carried by one man instead of carrying two of him, as it will do in the Competitions at Lympne. The photograph gives a better idea of the size and weight of the engine than would be given by drawings and figures.

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Specialists in Military Aircraft.



"HAWKER HORNBILL."

["Flight" photograph.]

The "Hornbill" Single-Seater Fighter Aeroplane with Rolls-Royce "Condor" engine, is the latest Hawker production delivered to the R.A.F. Like its predecessors, its all-round excellence marks it as a machine of outstanding merit.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ARMSTRONG SIDDELEY GENET.

There are very nearly as many opinions as to what would constitute the ideal engine for the light class of aeroplane as there are people who consider themselves entitled to hold an opinion. To appeal to the private owner and to lead to his continued existence in large numbers the light aeroplane engine should be rather more reliable than any of the larger types of aero-engine now in existence, should require the minimum possible amount of work in maintenance and overhaul, should be of the least possible weight, and of the least possible cost. It is difficult to put these requirements into any order of importance—it may for instance be held that reliability is the primary requisite, or otherwise the private owner will be killed off quickly. But if it is too costly the private owner will never come into existence—and it may be better for flying in general to produce an engine cheap enough to produce a lot of flying and yet dangerous enough to produce a fair number of casualties.

And precisely as it is difficult to put the relative importance of these various qualities into any order, so it is difficult to lay down any rule as to the best method of attempting to secure any or all of them.

Personally one is inclined to believe that the best compromise is likely to be attained by using a small number of relatively large cylinders, working at a moderate M.E.P. and moderate r.p.m. and making the engine as simple as possible—even at the expense of some considerable loss in fuel consumption and weight per h.p.

Others who may claim greater authority stoutly maintain that the dictate of experience of modern high-powered engine development must be followed, and that consequently multi-cylindered engines of high M.E.P. must be used and that to get reasonably low weight and over-all dimensions fairly high rotary speeds must be used.

Others, intrigued by the really remarkable performance of motor-cycle engines and some of their near derivatives, agree with the idea of using a relatively small number of fair-sized cylinders, but believe that they should be of high M.E.P. and high R.P.M.

In the meantime there is evidence that it is possible to use engines of almost all of the various possible types with fair success, and the forthcoming contest at Lympne, will, it may be hoped, provide a good deal of useful information on the subject. The Armstrong-Siddeley Genet, which is to be fitted to a de Havilland Moth should be of special interest, particularly as it will be possible to compare the performance of the new engine directly with that of the Cirrus.

Taking all the conditions into consideration it is not pos-

sible to compare the Genet with the Cirrus purely as a piece of engine design and construction. The Genet should undoubtedly beat the Cirrus on performance in every way. It is lighter, and therefore either one can carry more load—or carrying the same load obtain a better all-round performance or a similar performance with equal or better life between overhauls. One will obtain probably a lower fuel consumption.

Comparisons in regard to probable reliability, in the absence of practical experience, are certainly worth little—and will not be made. It may be taken for granted that the Genet will prove reliable enough to be of good service.

On the other hand it will undoubtedly cost a good deal more (rumour has it about £100) than the Cirrus. From its general form and design it seems possible that overhauls and repairs of the Genet may require more skill on the part of the mechanic than is necessary with the less refined Cirrus. The Cirrus runs remarkably smoothly—the Genet ought to run more smoothly.

Putting the whole thing into a nutshell, the Genet is of a type which ought to show definite advantages over any engine previously available for the light two-seater. And it will cost correspondingly more than its competitor.

Will the advantages prove so marked as to justify the extra cost in the eyes of the potential user?

That query must await its answer for some little while yet, but there is no doubt that the Genet is a very interesting and well worth trying attempt to meet the particular requirements of the light aeroplane.

The Genet is a low-powered engine designed to come within the weight limit of 170 lbs. laid down by the Royal Aero Club for the forthcoming Two-Seater Light Aeroplane Trials and at the same time to be of adequate power and size to give a reasonable performance and a high degree of reliability in a practical touring two-seater.

The Genet is of the five-cylinder, radial, air-cooled type, following in general design the well-known Lynx and Jaguar types. It has steel cylinders with aluminium alloy heads, shrunk, screwed, and locked into place in a manner similar to that used in the the larger engines of this make. And the cylinders are attached to the crankcase by screwing into a coned locking ring, also as in the Jaguar and Lynx.

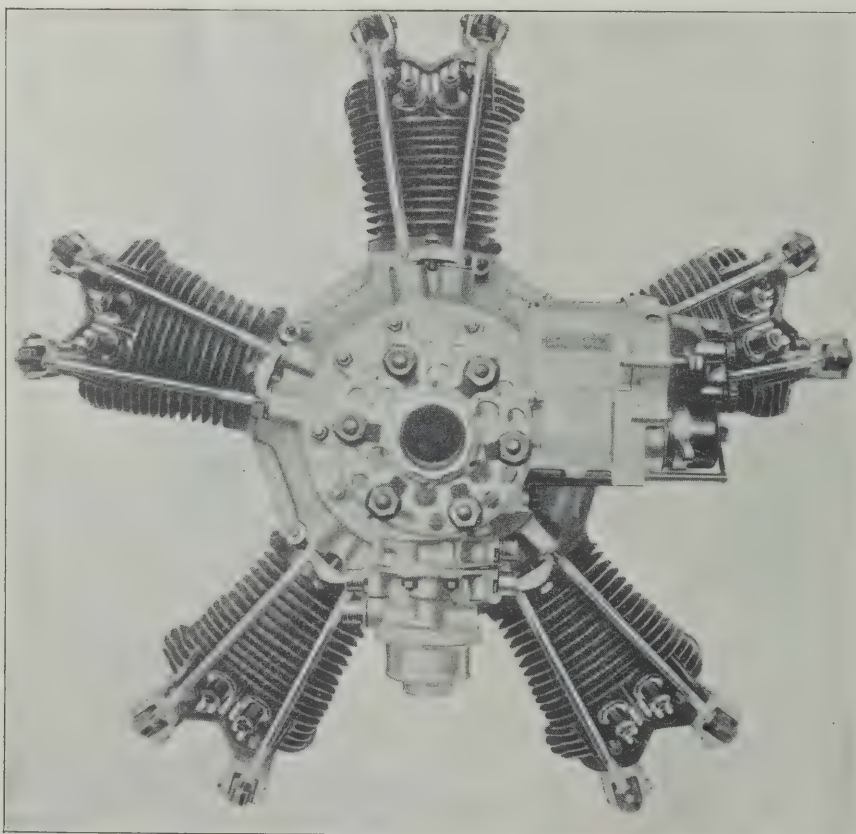
The crankcase is in one piece, with bolted-on front and rear covers. The front cover carries magneto and oil pumps, together with their shafts and gears, a ball race which acts as combined main and thrust bearing; together with a plain bearing which serves as an airscrew journal and an oil retainer.

The rear cover is compound, there being a ribbed disc closing the crankcase proper, and carrying the rear crankshaft ball bearing, followed by an induction chamber containing a mixing fan driven by the tail end of the crankshaft. Radial induction pipes lead from this chamber to the inlet valve, and a Zenith carburetter is attached directly to the casing.

The crankshaft is in one piece, fitted with balance weights. The big-end journal is of the split plain type, and both master and auxiliary connecting rods are of H section. The pistons are forged from "Y" alloy, are fitted with floating gudgeon pins, and carry two gas and two scraper rings each.

Lubrication is by dry sump, with a scavenger pump of capacity 50 per cent. in excess of the pressure pump. Both are of the gear type, spigot-mounted in tandem and vertically below the crankshaft on the frontcover of the crankcase. A B.T.H. magneto is similarly mounted on the port side of the same cover, and provision is made to permit of a second magneto being fitted on the other side. The accessibility of these accessories should prove a boon to the private owner.

As is shown by the specification the Genet gives ample power for a reasonable two-seater at a very moderate weight and for a very low fuel consumption, and if only circumstances will permit of its sale at a reasonably low price, it should be in considerable demand.



Front view of the Armstrong-Siddeley Genet, showing the accessibility of oil pumps and magneto.

The Greatest Test of all

This card does not necessarily include the fall of the last wicket.

2d. Lord's Ground

ENGLAND TO AUSTRALIA

Wednesday 30th June to Thursday 30th August

| AUSTRALIA. | | | First Innings. | Second Innings. |
|-------------------|----------------------------|-----|---------------------------|-----------------|
| 11 H. L. Collins | b Root | 1 | c Sutcliffe, b Larwood | 24 |
| 2 W. Bardsley | not out | 197 | | |
| 3 G. G. Macartney | c Sutcliffe, b Larwood | 35 | not out | 133 |
| 4 W. L. Woodfull | c Sutcliffe, b Root | 15 | c Root, b Woolley | 0 |
| 5 A. C. Cox | c Kilner | 1 | b Root | 9 |
| 7 J. M. Gregory | b Larwood | 7 | c Sutcliffe, b Root | 0 |
| 6 J. M. Taylor | c Carr, b Tate | 9 | | |
| 8 J. Richardson | b Kilner | 35 | | |
| 9 E. J. Bradman | c Sutcliffe, b Kilner | 28 | not out | 0 |
| 10 W. A. Oldfield | c Sutcliffe, b Kilner | 19 | c Sutcliffe, b Tate | 11 |
| 11 A. A. Mailey | 1 w, b Kilner | 1 | | |
| | B 12, 1-b 16, w , n-b , 28 | | B 5, 1-b 12, w , n-b , 17 | |
| | Total | 383 | Total | 194 |

| FALL OF THE WICKETS. | | | | | | | | | | | | | | | |
|----------------------|-------|-------|-------|--------------|-------|-------|-------|-------|--------|-----|--------------|-----|-----|-----|------|
| 1-11 | 2-84 | 3-127 | 4-158 | 5-187 | 6-203 | 7-282 | 8-338 | 9-379 | 10-383 | | | | | | |
| 1-2 | 2-125 | 3-163 | 4-187 | 5-194 | 6- | 7- | 8- | 9- | 10- | | | | | | |
| ANALYSIS OF BOWLING. | | | | 1st Innings. | | | | | | | 2nd Innings. | | | | |
| Name. | | | | O | M | R | W | Wd. | N-b. | O | M | R | W | Wd. | N-b. |
| Tate | | | | 50 | 12 | 111 | 2 | ... | ... | 25 | 11 | 38 | 1 | ... | ... |
| Root | | | | 36 | 11 | 70 | 2 | ... | ... | 19 | 9 | 40 | 2 | ... | ... |
| Kilner | | | | 34 | 5 | 70 | 4 | ... | ... | 22 | 2 | 49 | 0 | ... | ... |
| Larwood | | | | 32 | 2 | 99 | 2 | ... | ... | 15 | 3 | 37 | 1 | ... | ... |
| Woolley | | | | 2 | 0 | 5 | 0 | ... | ... | 7 | 1 | 13 | 1 | ... | ... |
| | | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

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(Allied with Sir W. G. Armstrong, Whitworth & Co., Ltd.)
Works and Aerodrome: Coventry.
London: 10, O'd Bond Street, W.1.

THE ARMSTRONG-SIDDELEY GENET.

SPECIFICATION.

| | |
|-----------------------------------|------------------------------------|
| Bore | 4 ins. (102 m/m.) |
| Stroke | 4 ins. (102 m/m.) |
| Compression ratio | 5.2/1 |
| Diameter over all | 32.6 ins. (829 m/m.) |
| Weight (single magneto) | 168 lbs. |
| Normal output | 65 b.h.p. at 1,850 r.p.m. |
| Maximum output | 75 b.h.p. at 2,035 r.p.m. |
| Fuel consumption at normal b.h.p. | .575 pts. (.0321) per b.h.p. hour. |

PRATT AND WHITNEY DOINGS.

Reference has already been made to the Pratt and Whitney Aircraft Company and the record production of their first aero-engine. It will be remembered that the new company was formed as a subsidiary branch of the world-famous precision tool manufacturers in August, 1925, with Mr. F. B. Rentschler and Mr. G. J. Mead, both formerly with the Wright Aeronautical Corporation, as President and Chief Engineer respectively.

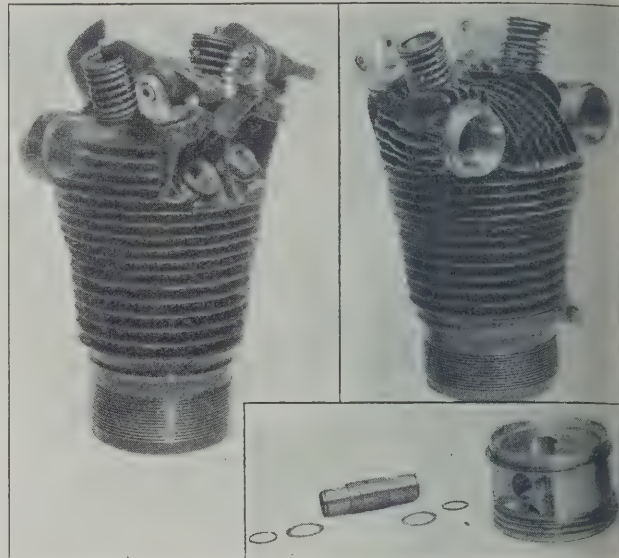
On Dec. 24, 1925, their first engine, the Wasp air-cooled radial, of 400 h.p., was ready for test, and thirty days from this date the engine had passed the U.S. Navy's 50-hour test. The Navy Department announced that the Wasp was superior in characteristics to any previous radial of its size or type, and an experimental order for a number of engines was placed with the company.

Immediately the design of the Wasp was completed, on or about Jan. 1, 1926, work was begun on a larger type of radial engine, and before June 1, the Hornet, as the new engine is called, was ready for test.

The characteristics of the new engine have not yet been disclosed in detail, except that the design closely follows the Wasp, that the type is primarily intended for large weight carrying aircraft, and on this account incorporates reduction gearing for the airscrew, that the cubic displacement of the Hornet is about 25 per cent. greater than the Wasp, and that the weight per horse-power characteristics of the Hornet are even more favourable than the Wasp's.

Thus in its first year of operation this company has produced two high-powered engines.

A number of experimental Wasp engines have been delivered and at least three are installed in aircraft and are undergoing flight tests. These three engines have been fitted into the Wright Apache single-seat ship-board fighter, the Curtiss P.1, and Boeing P.9 pursuit type biplanes.

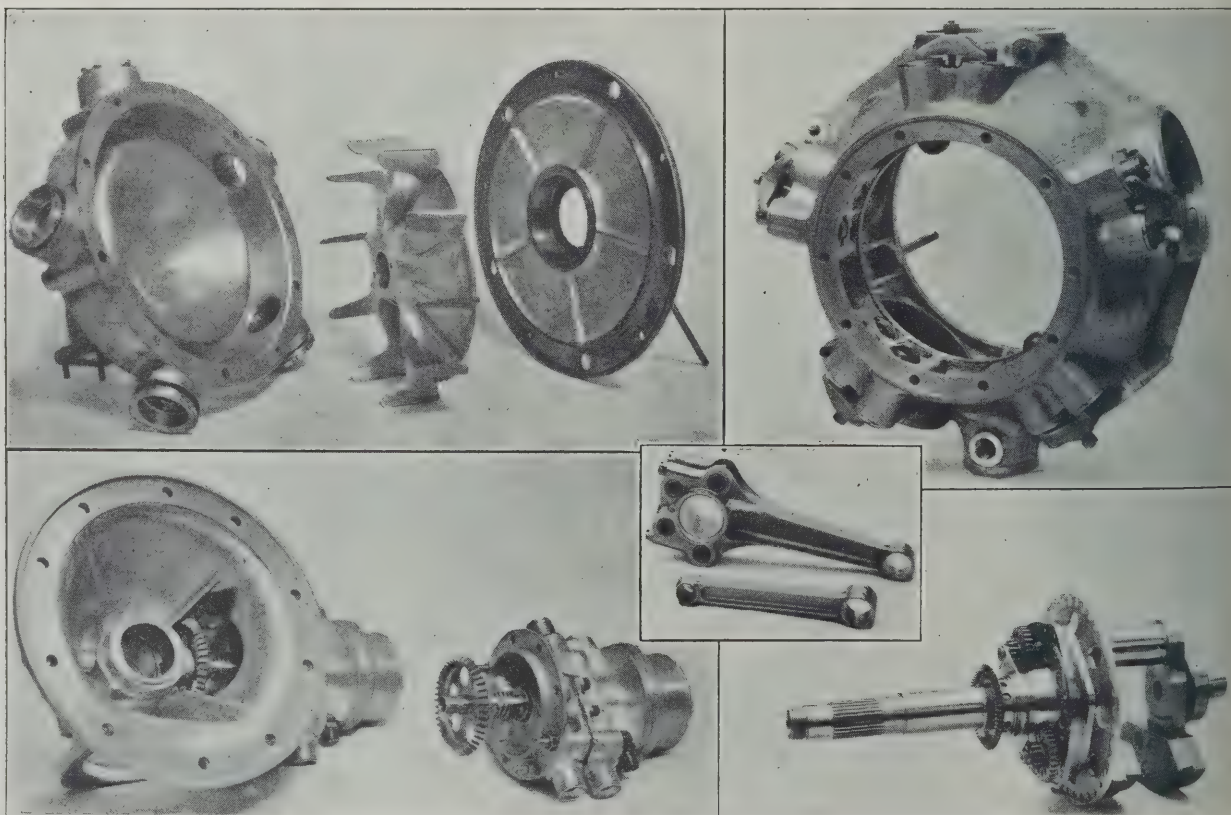


THE ARMSTRONG-SIDDELEY GENET.—Two views of a cylinder, and one of a piston, gudgeon pin and retaining washers.

The Chance Vought Corporation, who have supplied practically all the U.S. Navy's ship-board and catapult type aircraft, has the U.F.-1 single-seat fighter and the O2U-1 two-seat observation ship-board aircraft, both designed for the Wasp, ready for test, and in addition they have designed for the U.S. Navy, a transport and mail-carrying aircraft to be fitted with two Wasp engines.

It has been announced recently that Mr. W. B. Mayo, Chief Engineer of the Ford Motor Company, and Mr. C. F. Kettering, Vice-President in charge of engineering of the General Motors Corporation, have been elected to the Board of Directors of the Pratt and Whitney Aircraft Company.

That two men of such importance, and of two competing interests, should have joined forces in the Directorate of the Pratt and Whitney concern, is evidently significant of further interesting developments.



THE ARMSTRONG-SIDDELEY GENET.—Top left, the induction chamber, the mixing fan, and the diaphragm carrying the rear crankshaft bearing. Top right, the crankcase. Bottom left, crankcase front cover with oil-pump drive and oil pump in place, with a second detached pump unit alongside. Bottom right, the crankshaft complete with the cam gear and auxiliary drive gear. Inset are shown the master, and one auxiliary, connecting rods.

Appreciation

MR. ALAN COBHAM
cabled from Sydney :
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BOURNE TO-MORROW
AS USUAL SIDDELEY
JAGUAR RUNNING
PERFECTLY ON
CASTROL OIL. AMPLE
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|--|---|
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Such combination in manufacturing methods is only possible in works where the Entire process of Tube Manufacturing from the raw bloom is carried forward into all the intricacies of final manipulation under one complete organisation throughout.



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

A VISIT TO SHORT BROS.

A recent visit to Short Bros.' works at Rochester revealed as is usual much that is of interest. Approaching Rochester Bridge in the train a large twin-engined seaplane afloat on the Medway obtruded itself on one's notice, and was distinctly noticeable after arrival at the works. Unfortunately this machine is still among the secrets, but as the daily Press has already chronicled the fact that a large all-metal flying boat with twin engines took the air at Rochester on that day and has placed certain facts concerning it on record no harm can be done by confirming the more reliable of the statements which have so appeared.

This machine is a large all-duralumin flying-boat, with biplane wings, a considerable overhang on the top wings, and twin engines, designed for the Air Ministry for service at sea. The preliminary flights so far made promise a remarkably fine all-round performance.

The main object of the visit to Rochester was to witness a demonstration of the Short Mussel, the very interesting all-metal light seaplane with a Cirrus engine, which was described in *THE AEROPLANE* of Mar. 10, and illustrated since.

The Mussel is a low wing monoplane mounted on twin floats, with two tandem seats, with floats, fuselage, and wing spars of duralumin, and an undercarriage and wing bracing struts of steel tube. Also it has an all-duralumin airscrew of Short design and manufacture of novel construction which one is unable to describe at the moment.

In the interval between the description of the Mussel and the present time the absence of any definite news as to the performance of this little machine had given rise to rumours that she had proved to be of hopelessly poor performance.

On original trial her performance did in fact fail to reach expectations, particularly in regard to climb, but this trouble has now been overcome by a very small change in the shape of the fairing just behind the engine, and the Mussel is now a very satisfactory two-seater with an exceedingly good all-round performance.

On the occasion of the visit in question there was a somewhat gusty wind of probably 15 m.p.h. average velocity. With Mr. Parker as pilot and a passenger of quite respectable weight the Mussel took off in under 10 seconds from opening out the engine. Her floats made amazingly little fuss, though the water had just that degree of lop which encourages small floats to look their dirtiest, and showed no sign of porpoising. Also the machine steered on the water in a surprisingly satisfactory manner, considering the absence of any water rudder.

After taking off the Mussel climbed at something in the neighbourhood of 300 ft. per minute and at a gradient which certainly exceeded the 1 in 9 to 1 in 10 considered to be satisfactory for civil passenger carriers. Her manoeuvrability is excellent, and her controls are obviously effective right down to and beyond the stall, at which point it is possible to hold her nose up and to check any tendency to spin.

A float sea-plane is scarcely the type of aircraft most suitable for a display of crazy flying, nor were the weather conditions those which would prompt any sane pilot to take liberties with a machine of doubtful behaviour. But Mr. Parker gave an exhibition of crazy flying on the Mussel which compared favourably with the best effort of its type that one has yet seen.

And last but not least it should be recorded that Mr. Parker and his passenger were merely put aboard and taken off from the Mussel by a boat. The machine was lying at moorings and had been so lying for the past three days. Mr. Parker started up the Cirrus, using the hand-starter, his passenger cast off and climbed into his seat unaided. After landing, the passenger climbed onto the floats, picked up the buoy and made fast, and the boat then came alongside and took off the crew. It is on record that Mr. Parker has on several occasions successfully come up to his moorings and tied up single-handed, which is fairly convincing testimony to the Mussel's handiness on the water.

The Short Cockle—the little flying boat with twin Blackburn Tom Tit engines—has just returned to Rochester after extended trials at Felixstowe. The Cockle has a duralumin hull, H.T. steel wing spars, and duralumin ribs. She was built over two years ago, and since her construction has been in fairly continuous exposure to sea water and the weather. Her steel spars are very definitely rusty. The duralumin ribs are—apart from minor mechanical damages—as good as new.

In the immediate vicinity of the after step of the hull there are one or two areas where noticeable corrosion has occurred. This localised corrosion is probably explained by the fact that this step is closed, and that the drain plug fitted does not permit of cleaning out the space between the hull and the step bottom. Repair of the damaged plates can very simply be made, and no appreciable harm would result if they were delayed.

In no other part of the hull can any noticeable corrosion be found, and it is believed that providing care is taken to avoid closed or inaccessible spaces such as exist at the corroded part of this hull, the endurance of the major part of the Cockle hull can be attained throughout a properly designed duralumin hull.

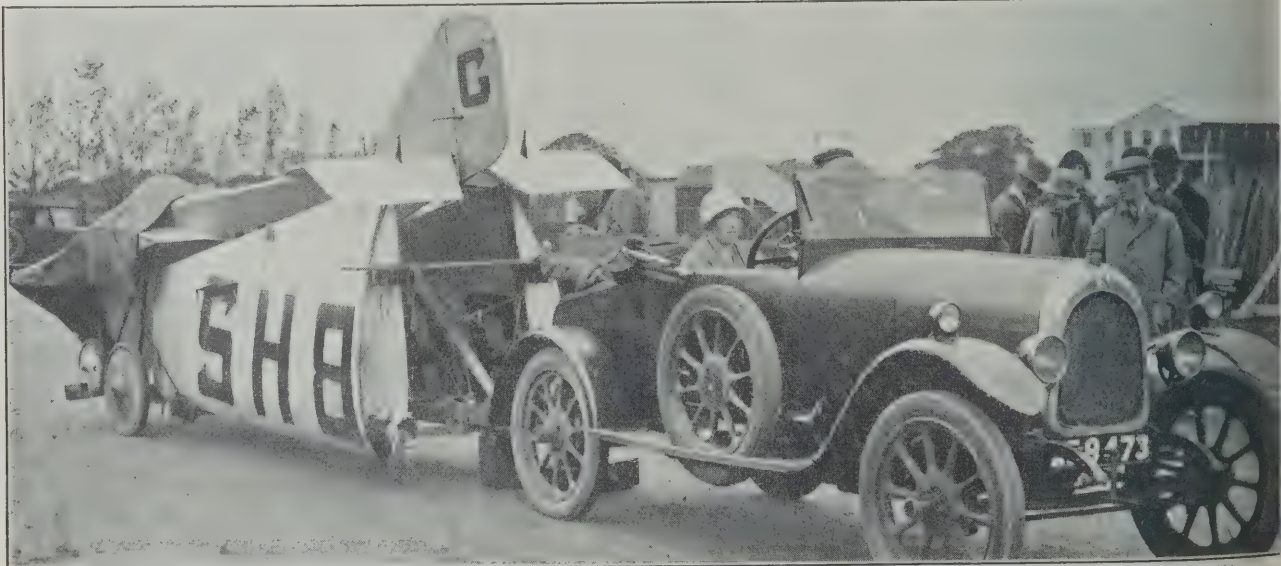
Practical experience has shown other very marked advantages of the metal hull or float. During one of its first test flights Mr. Cobham's D.H.50J bumped the bow of one float into an obstruction sufficiently hard to produce a very serious dent. Had it been a wooden float planking and timbers would have broken and the float would have made water. This float did not leak and could quite safely have been left as it was.

But in fact the dent was knocked out and all traces of the accident removed by a few hours' work.

That other people have realised the value of the duralumin float is evident from the fact that floats for machines built by three other aircraft constructors are in course of manufacture at Rochester.

A Short Chamois, a new two-seater corps-reconnaissance machine, of all-metal construction, is now in an advanced state, and as it is now on the part publication list, it is hoped that it may shortly be possible to publish photographs of it.

In addition, there is a very interesting and already much-talked-of racing machine which is being built, but not designed, by Short Bros. for the Air Ministry. This machine is also in an advanced stage, and is an exceedingly pretty piece of work. This too it may shortly be possible to describe.—W. H. S.



ROAD TRANSPORT.—How the Royal Aircraft Establishment Aero Club's Hurricane, which was piloted by Flt. Lt. Chick, travels to and from flying meets. The road wheels are those originally intended for her aerodrome wheels.

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TO
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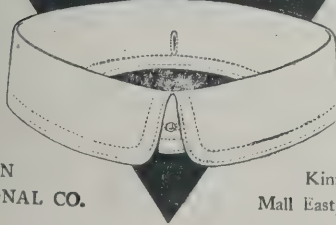
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COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 31; Tuesday, 29; Wednesday, 27; Thursday, 30; Friday, 27; Saturday 27; Sunday, 15.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin. Machines 98, passengers 806, freight 20 tons.

AIR UNION:

Paris—London: Machines 40, passengers 237, freight 12½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 24, passengers 117, freight 2½ tons.

SABENA:

Brussels—London: Machines 14, passengers 96.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 5, passengers 16.

PRIVATE:

Machines 5, passengers 0.

Total number of trips by British Machines, 103, carrying 806 passengers. Foreign Machines 83, carrying 466 passengers.

Comparative Figures:

Week ending Aug. 22:

Machines, 186; Passengers 1,272; Crews, 226; Total personnel, 1,498.

Corresponding week, 1925:

Machines, 196; Passengers, 1,125; Crews, 281; Total personnel, 1,406.

Corresponding week, 1924:

Machines, 176; Passengers, 904; Crews, 223; Total personnel, 1,127.

Corresponding week, 1923:

Machines, 144; Passengers, 724; Crews, 231; Total personnel, 955.

Corresponding week, 1922:

Machines, 176; Passengers, 642; Crews, 203; Total personnel, 945.

Corresponding week, 1921:

Machines, 114; Passengers, 437; Crews, 140; Total personnel, 577.

Corresponding week, 1920:

Machines, 123; Passengers, 262; Crews, 154; Total personnel, 416.

Croydon Notes.

Seven years ago to-day, Wednesday, that is to say, on Aug. 25, 1919, the cross-Channel air service came into being. The first concern to start was Air Transport and Travel, Ltd., the moving spirit of which was Mr. Holt Thomas. A week later Handley Page Transport, Ltd., joined in the fray. Since then civil aviation has not progressed quite with the leaps and bounds which were prophesied.

At any rate, things do certainly seem to be taking a turn for the better. The management of Imperial Airways, Ltd., is in good hands, and is operated by far-seeing men who are anxious to make the most of opportunities without taking chances.

In 1919 the London Air Port was Hounslow, and the move to Croydon was not made until March 30, 1920.

On Aug. 25, a D.H.4A left Hounslow at 09.10 hours and reached Le Bourget at 11.40 hours. The cargo was one Press representative, a consignment of newspapers, several brace of grouse, and a number of jars of Devonshire cream.

It left Le Bourget at 12.40 hours and reached Hounslow at 14.45.

Although one has by one no record of who was the pilot, one believes that it was our old and esteemed friend Mr. Jerry Shaw, now on the Aviation side of Shell-Mex, Ltd.

Things really have progressed, though it may be said that there is little technical progress. In the original machine two passengers were carried for 360 h.p.—i.e., 180 h.p. per passenger. This was decreased in the D.H.16 to 90 h.p. per passenger, and in the D.H. 34 to 45 h.p. per passenger. The W8b carried 14 passengers at 51 h.p. per passenger, and the later version, the W10, carries 14 passengers at 64 h.p. per passenger.

The latest machine, the Armstrong-Whitworth Argosy, carries 21 passengers at 55 h.p. per passenger.

At the present moment, therefore, 55 h.p. per passenger (with a goodly quantity of luggage per passenger) seems to be the best we can get.

A light aeroplane has flown with a loading of 7 h.p. per passenger. It seems, therefore, that we ought to be getting at most 20 h.p. per passenger, at a speed of 100 m.p.h. before commercial aviation arrives.

Moreover, we must have many more safety devices which will enable 100 per cent. efficiency to be maintained in the winter as well as in the summer.

One believes that we are on the threshold of such developments, and the sooner we arrive there the sooner will come the long-promised and inevitable boom in aviation.—G. D.

AN AIR LINE ACCIDENT.

A four-engined Blériot belonging to the Air Union crashed on Wednesday, Aug. 18, at Hurst, two miles south of Lympne aerodrome. Two passengers, Mr. Blaney and M. Rizzi, were killed, and the pilot, M. de Lisle, died in hospital a day afterwards. Of the other eleven passengers, two were unhurt and the others were injured more or less seriously.

Apparently the pilot was trying to land when the clouds were low and visibility was very bad. The machine struck a barn and then hit a haystack. One of the four engines was out of action, and though this was not likely to have caused the landing, it probably made the machine awkward to control, and may have been a contributory cause.

M. Pierre de Lisle was 36 years of age and learned to fly in June, 1917. At the end of the war he was a Sous-Lieutenant in the French Air Service. He joined the Air Union in September, 1923. In November, 1925, he alighted in the Channel on a Goliath loaded with bullion, and he and his mechanic were rescued after jettisoning their gold to help in keeping the machine afloat. In October, 1923, he was the pilot who took M. Maneyrol's body to Le Bourget.

PERSONAL NOTICES.

DEATHS.

BOLAM.—On Aug. 15, at Dalbandin, Baluchistan, I.-AC. William Slater Bolam, R.A.F.

GAPE.—On Aug. 18, near Cambridge, as the result of a flying accident, Roy Nugent Treherne Gape, Flg. Off., No. 19 (Fighter) Squadron, R.A.F.

Mr. Gape joined the R.A.F. with a short service commission, in June, 1924, and was posted direct to No. 10 Squadron. He was a son of Captain and Mrs. Gape, of Clanricarde House, Tunbridge Wells.

JUNOR.—On Aug. 19, at Hucclecote, near Gloucester, as the result of a flying accident, Flt. Lt. Hugh Robert Junor, D.F.C., R.A.F., Experimental Section, Royal Aircraft Establishment.

Flt. Lt. Junor served in the R.F.C. and R.A.F. with distinction during the War 1914-18, and was awarded the D.F.C. In February, 1919, he joined No. 31 Squadron in India, and remained there until September, 1922, when he was appointed a test pilot to the R.A.E., South Farnborough. He was promoted to the rank of Flt. Lt. in January, 1924.

Describing the act for which Flt. Lt. Junor was awarded the D.F.C. in 1918, *The London Gazette* of Feb. 8, 1919, states:—"Lt. Hugh Robert Junor (Egypt). On Sept. 17, this officer performed an act of conspicuous merit and gallantry. Single-handed he engaged five enemy machines, and so protected the Arab force from aerial attack at a most critical time when they were engaged in destroying an important railway. Lt. Junor continued the combat till he was driven down by force of numbers, his petrol supply being practically exhausted."

REES.—On Aug. 17, at Hulverstone Down, Isle of Wight, as the result of a flying accident, John Leslie Llewellyn Rees, Lieut., R.M., and Flg. Off., R.A.F.

Mr. Rees was detached from the R.M. for duty with the R.A.F. in June, 1924. After a six-months' course of instruction at No. 1 F.T.S., Netheravon, he was attached to the R.A.F. Base at Leuchars. In June, 1925, he was posted to No. 443 Flight, at Leuchars, and in January, 1926, he was transferred to the R.A.F. Base, Gosport.

WRIGHT.—On Aug. 16, as the result of a flying accident, Captain T. H. J. Wright, Seaforth Highlanders (Flg. Off., R.A.F.), son of the Rev. J. and Mrs. Wright, Addiscombe Vicarage, and dearly-beloved husband of Eileen Vaughan Wright.

Capt. Wright served with his Regiment with distinction during the War 1914-18, and was seconded for duty with the R.A.F. in March, 1924. He was attached for two years to No. 5 F.T.S., Sealand, and was posted to No. 13 (Army Co-operation) Squadron, in March, 1926.

FORTHCOMING MARRIAGES.

EARP—NASH.—The engagement is announced between Flt. Lt. David S. Earp, D.F.C., youngest son of the late Mr. W. J. Earp, and Mrs. Earp, of Wandsworth Common, and Carolyn, daughter of Dr. Francis S. Nash, Medical Director, United States Navy, and Mrs. Nash, of Washington, D.C.

HUMPHREYS—LOWE.—The engagement is announced between Flt. Lt. Dudley D'H. Humphreys, R.A.F., only son of Mr. and Mrs. Humphreys, of Bournemouth, and Margery Constance, only daughter of Mr. and Mrs. Fox Lowe, of Limpsfield, Surrey.

MORGAN—WORKMAN.—The engagement is announced between Wallace C. C. Morgan, R.A.F., younger son of the late Mr. and Mrs. H. Morgan, of Newport, Mon., and Christine M. Workman, younger daughter of Mr. and Mrs. Workman, also of Newport, Mon.

NEVILL—THOMAS.—The engagement is announced between Flt. Lt. Richard Thornton Nevill, Reserve of Air Force Officers, only son of the late Mr. Frank Nevill, J.P., and Mrs. Nevill, Llanelli, Carmarthenshire, and Ruby, younger daughter of Mr. and Mrs. H. Spence Thomas, of Whitchurch, Cardiff.

BIRTHS.

DE BURGH.—On Aug. 10, at Barrocks, Mayfield, Sussex, to Norah, wife of Flt. Lt. Desmond de Burgh, A.F.C.—a daughter.

OSMAN.—On Aug. 16, at a nursing home, to Amy, wife of Major W. H. Osman (late R.A.F.), of 119, Priory Road, N.W.6—a son.

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Edited by R. G. Grey

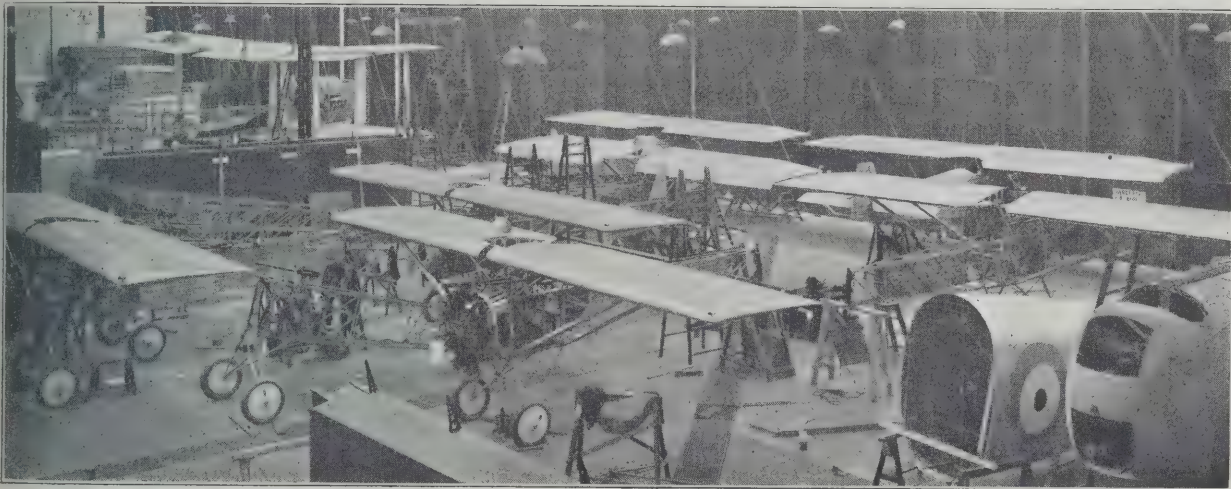
Vol. XXXI. No. 9

SIXPENCE WEEKLY.

[Registered at the G.P.O. as a Newspaper.]

"THE BUCKLER OF THE GAUL"

(Kipling.)



AN ANGLO-FRENCH ALLIANCE:—The Erecting-Shop at the works of Vickers Ltd. at Weybridge, showing a number of Wibault Monoplanes with Bristol Jupiter engines in process of completion. The Wibault is one of the first-line fighting machines of the French Army and is built almost entirely of Vickers Duralumin. These machines are being built in England entirely of British material for a South American Government.



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ON ERRORS OF JUDGMENT.

The following article was written on Aug. 19, before anything was known of the death of Flight-Lieut. Junor or of various other accidents which were announced on or about that day. It should have appeared in THE AEROPLANE last week, as was indicated by the wording at the top of the front page, but its publication had to be postponed owing to pressure of news.—C. G. G.

Everybody recognises the fact that to a certain degree the Royal Air Force is always on active service. There was a time when ordinary flying was more dangerous than even front line warfare on the ground, at any rate up to the end of 1914. Then, as the War 1914-18 forced us to make some progress in aeroplane and engine design, although much of that progress was entirely in the wrong direction in that we sacrificed everything to performance and got our performance by sheer power and not by efficiency, the actual danger of war flying in comparison with ground warfare decreased. And the ultimate figures compiled for the whole of the war period proved that flying was a safer job than soldiering whichever way one looked at it.

Even allowing for the fact that the Army on the ground had comparatively few fatal accidents in training behind the lines and that the Flying Services killed a lot of people in training, and also allowing for the fact that somewhere about 95 per cent. of the air fighting was done by officers and that only about 5 per cent. of the ground fighting was done by officers, the casualty lists showed that the deaths among offi-

cers in the Flying Services were a smaller percentage of the total number of officers employed than were the deaths among officers of the Army on the ground. Which clearly proved that war flying was a safer job than soldiering on the ground.

In time of peace the position is different. The Army has very few casualties, fatal or otherwise. And unfortunately the Air Force continues to have quite a large number of casualties.

In answer to a question in the House on Aug. 4 Sir Samuel Hoare stated that there were 44 deaths in the R.A.F. due to flying accidents between Jan. 1 and July 27, 1926. Previously, in reply to Mr. Viant on July 27, Sir Samuel Hoare had stated that between June 30, 1925 and June 30, 1926, 69 persons in the King's Services had been killed in flying accidents, namely, 65 R.A.F. personnel, 2 Army officers and 2 officers of the R.A.F. Reserve, and that 89 of the R.A.F. personnel had been injured.

During the same period 70 aeroplanes of post-war design and 192 of war-time design were written off Air Force charge after crashing. And the undepreciated value of these machines, that is to say the cost price to the Government, was roughly £500,000.

Thus it may be seen that there were altogether 158 casualties in Air Force flying as the result of 262 crashes. Most of these machines ought to have been written-off seven years ago. So the cost in money was trivial. But the cost in life was much too high.



BRITISH ENTERPRISE ABROAD.—These four views show incidents in connection with the testing on Mar. 16, 1926, of the first Blackburn Velos (450 h.p. Napier Lion engine) built in Greece at the factory organised by the Blackburn Aeroplane and Motor Co. Ltd., at Phaleron, near Athens. Top left, Greek sailors placing the torpedo in position; top right, General Pangalos, the Greek Prime Minister of the moment, viewing the machine with Colonel Sempill. Bottom left, the machine in a shed guarded by Greek sailors. And, bottom right, the machine taking-off in the official handing-over trials, piloted by Col. the Master of Sempill.

A MATTER OF MILEAGE.

The Air Force consists roughly of 3,000 officers and 30,000 men. How many of the total personnel of 33,000 actually fly regularly is difficult to calculate.

Every officer is supposed to fly. But probably not more than 1,500, at the outside, fly regularly either as pilots or observers, assuming that 250 flying hours per year might fairly be called regular flying.

All the airmen are liable to fly and some of them fly as pilots. But the majority of them are doing mechanical work on the ground and probably not more than 1,500 of them can be reckoned as flying regularly, on the 250 hours per annum basis.

So assuming that there were about 60 deaths for 3,000 aviators that brings the death rate down to 20 per thousand. Which perhaps does not compare so badly with the normal death rate of any ordinary city which is about ten per thousand and includes aged persons and infants, among whom the death rate is much higher than it is among people of what one may call military age.

Also, of course, some consideration ought to be given to the question of the miles flown per fatal accident. The actual number of deaths per annum seems to be just about the same year by year. But we know that the mileage flown by the R.A.F. in these days has been increasing steadily year by year ever since 1920, when the amount of flying was about at a minimum.

Sir Samuel Hoare stated in the House of Commons that it was not in the national interest to give the number of flying hours flown by the R.A.F. One cannot see that any harm would be done by publishing the figures. In fact our national prestige might be increased quite considerably if other nations were told frankly how much more flying the R.A.F. does than is done by the air forces of other nations. Still, the figures are not available and so it is impossible to calculate the flying hours or mileage for each fatal accident. If such figures were published they would probably make the casualty list look much better than it does.

Nevertheless, even though the death rate per thousand of personnel and the death rate per thousand hours flown and the death rate per thousand miles covered may be ever so much lower in the R.A.F. than it is in the air service of any other country, the fact still remains that more people are killed in flying accidents than would be killed if flying were made safer. And one of the best ways of making flying safer is to discover the causes of fatal accidents and set to work to remove those causes.

THE PUBLICATION OF FACTS.

In the very earliest days of flying, as Sir Frank McLean recalled at the Royal Aero Club Banquet which was given in his honour recently, one of the functions of the old Aero Club, before it became Royal and less energetic, was to discover causes of accidents and to publish whatever could be discovered about those causes with the object of helping pilots, mechanics and aircraft designers alike to avoid such mistakes in future. And a vast amount of good was done to aviation in consequence.

In those days, in the old *Aero* and in the early issues of *THE AEROPLANE*, one made a speciality of studying all accidents, fatal or otherwise, and of publishing not only the official findings of the Aero Club Accidents Committee but also all available suggestions as to the causes gathered from eye-witnesses of the accidents and from those who had studied the wrecks and from those who had ideas and theories on the subject. The result was that although quite a lot of

the theories as to any particular accident were undoubtedly wrong so far as that accident was concerned, they did at any rate make people think, and helped to prevent other accidents which might have occurred through the suggested causes.

In these days enquiries into all accidents, whether Service or civilian, are held by the Accidents Investigation Sub-Committee, which is part and parcel of the Air Ministry's organisation as a branch of the Aeronautical Research Committee. This Sub-Committee is under a very able officer with considerable technical knowledge and a great deal of experience of aviation. And no doubt he and his colleagues do discover a very great deal about the causes of accidents, fatal and otherwise. But the results of their investigations are not published and consequently they do very little good either in the way of preventing accidents in the Royal Air Force or in the way of improving aircraft design.

WHO PROFITS?

So far as one can discover the findings of this Sub-Committee are circulated only to certain of the technical departments at the Air Ministry and to the makers of the machines which were involved in the accidents. These manufacturers may of course benefit by the information received and may make their own particular machines stronger or better, or may improve their aerodynamic design, in consequence. Some few of the tragicomic experts at the Air Ministry may bottle up a little more technical knowledge for their own benefit, in the hope of ultimately selling themselves and their accumulated knowledge to some commercial manufacturer of aircraft, but the great body of the Aircraft Industry and of officers and mechanics of the R.A.F., who would really benefit by the general publication of such investigations, are left in complete ignorance about them.

Thus not only is very little good done by the investigations, but a certain amount of definite harm is done, for all sorts of rumours get about through the R.A.F. and through the Trade about the reasons for this or that or the other crash and so the reputations of quite good aeroplanes and engines (and pilots) suffer in consequence.

The story may get round that one particular aeroplane has, say, a habit of breaking its centre-section bracing, with the result that its wings collapse if it is pulled suddenly out of a dive. Another may get the reputation of shaking the tail end of its fuselage loose if it is rolled too suddenly. Another may get the reputation of breaking its leading edge if looped. Another may get the reputation of getting into an uncontrollable and irretrievable spin if flown on its back. An engine may get the reputation of always having trouble with its reduction gear or of breaking its valve-tappets or of pushing its connecting-rods through its crank-case.

All these rumours decrease the confidence of the pilots and observers in the machines and so decrease the flying moral of the Air Force. Besides which they damage the reputation of the manufacturers.

THE RIGHT WAY TO WORK.

If, on the other hand, full reports of what is discoverable about accidents were circulated not only to the R.A.F. in Air Ministry Weekly Orders, and to the Aircraft Trade in confidential documents (which they are not), but to the World at large through the Press, everybody would be benefited thereby.

In a great many cases the reputations of deserving manufacturers would be cleared. And if now and then a genuine error of judgment in design was disclosed it would actually



INTERESTED SPECTATORS.—A group of officers watching the first flight of the first Blackburn Torpedo-Dropper (Napier engine), built at the Greek Naval Aircraft Factory. In the group may be seen, with thumb in pocket and complete with beard, Admiral Botanis, the Greek Minister of Marine. Next to the right, with hand in the breast of his coat, is Captain Aftanides, Director of Air Services. Just beyond him is Mr. Robert Blackburn, apparently illustrating that famous song of his Yorkshire fellow-countrymen, "On Ilkley Moor wit'out 'at." The British officer in front of Mr. Blackburn is Colonel Tufnell, the British Air Staff officer, apparently trying to look like a Naval officer.

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Manchester Guardian, 22nd June, 1926

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do the firm no harm in the long run, because the firm would be able to announce to the Public that a mistake had been made and promptly rectified.

There might be some firms who would object to the World knowing that its designers ever had made a mistake. But one believes that the majority of firms would much rather own up to a mistake and put it right than have rumours going around doing them real damage.

A case in point is to be found in the forced landings of the machines with Nimbus engines in the King's Cup Race. All sorts of rumours had got about at Hendon which would have given the impression that the Nimbus had a habit of seizing up or breaking things and was therefore unreliable, in spite of the fact that the first Nimbus had so successfully passed the Air Ministry type tests, which are about the most searching in the world.

But A.D.C. Aircraft Ltd., as soon as they had discovered what was the trouble, promptly made known to everybody that all that had happened was that the collars holding the valve-springs—in these production engines, which were made after the type-test engines—were made with an insufficient radius at one particular point, with the result that they broke and let the valves fall away from the springs. It was a purely minor matter which has cost nothing to put right in subsequent engines. And in the engines which failed in the race it was put right at the mere cost of fitting different collars to the valve springs.

The consequence has been that the reputation of the engine has not suffered in the least now that the cause is known. And the A.D.C. people's reputation has been increased by their openness and honesty. There is always a comfortable feeling about dealing with men or firms who are prepared to stand for their mistakes instead of hiding them away and denying rumours which are known to be true.

A LEGAL OBJECTION.

One gathers that the chief objection to publishing the judgments of the Accidents Investigation Sub-Committee is that although the Sub-Committee might be perfectly convinced about the cause of an accident it might not be able to produce a proof of its judgment which would hold good in a Court of Law and that it might therefore be liable to be sued for libel by a firm whose business might be damaged by the Sub-Committee's reports. One considers that this in itself is an error of judgment.

Hardly any firm would be so foolish as to sue for libel either a Government department on which it depended largely for its business or a Sub-Committee which was honestly doing its best to improve the breed of British aircraft. Possibly a firm might disagree from the Sub-Committee's conclusions and it might even possibly produce proof that the Sub-Committee was wrong. In such case the firm would have precisely the same opportunity of publishing its defence as the Sub-Committee would have of publishing its report.

If in certain instances the Sub-Committee was unable to come to any definite conclusion as to the cause of an accident then it might do quite a great deal of good by publishing a report giving its opinion as to several possible causes of that accident. If it produced, for example, three possible reasons for the accident, then it would provide pilots and designers alike with information about three definite things to be avoided in future. And in that way it would perhaps go even further towards securing safety than if it fixed on one definite cause for each accident.

In fact the Accidents Investigation Sub-Committee should deal with all aircraft accidents in exactly the same way that the Board of Trade deals with railway accidents and shipping accidents. If the Board of Trade officials concerned discover that a railway accident is due to a failure of material in a locomotive or in a railway coach or in the signalling mechanism or anything else, they say so brutally and frankly without any consideration for the railway company concerned or the manufacturers of the material. And that brutal frankness accounts very largely for the fact that British railways to-day are so much safer than railways in any other part of the World.

One can only hope that some time in the future, allowing the Air Ministry and its technical department and its legal department some few months in which to consider the subject, the Air Ministry will decide to issue really informative reports on all accidents in which the cause can be traced to faults in material, workmanship or design.

WHOSE "ERRORS OF JUDGMENT"?

If one could get hold of the official explanation of all the accidents which have happened during the past twelve months in the R.A.F., one would probably find that the great majority of them are ascribed simply to an error of judgment on the part of the pilot.

Even the most experienced pilots make mistakes once in a while and crash their machines, and occasionally get killed themselves or kill their passengers, just as even the most experienced motorists occasionally meet with accidents. But if one just looks through the casualty list in THE AEROPLANE

week by week one finds that by far the greater number of fatal accidents occur to new pilots who have only done a few hours flying alone. And in some of the cases in which a very experienced pilot has been killed he has actually been killed owing to what is called an error of judgment on the part of a pupil with whom he has been flying as instructor.

The question is whether these so-called errors of judgment which cause so many deaths in the R.A.F. are in fact errors of judgment on the part of the pilots or errors of judgment on the part of the Department of Supply and Research at the Air Ministry?

When the late Mr. Blondin chose to walk across Niagara on a tight-rope, as he did successfully, it was a wonderful exhibition of skill and nerve. If he had made a slip and fallen in and killed himself, it would have been an error of judgment on his part. But if an Army Commander wishing to get his army across a river chose to string a number of tight-ropes across it and then ordered his army to march across the tight-ropes, with the result that half of them were drowned, one would scarcely ascribe their deaths to errors of judgment on their part. One would merely say that the army commander was a lunatic.

In the very early days of Aviation flying a box-kite or some of those early monoplanes was at least as risky as walking a tight-rope. They had no stability in any direction and they remained right side up thanks entirely to the skill and judgment and nerve of the pilot.

Then somewhere about the middle of the War 1914-18 we began to know quite a good deal about aircraft construction and a little about aerodynamics. The result was that we began to produce somewhere about 1916-17 aeroplanes which were more or less stable and did at any rate obey their controls fairly well if the pilot accidentally stalled them and consequently found himself in a nose-dive or spin.

The position then, to return to the analogy of the army and the river, was rather as if an Army Commander, in order to save time and expense, ordered his army to walk across a series of planks laid on trestles instead of allowing his engineers to build a proper bridge across which men and animals could march in safety. Probably most of the troops would get across the planks all right, but a great many would fall down between the planks and be drowned. And of course their deaths might slightly more reasonably be ascribed to errors of judgment.

In these days we know, or at any rate any decently educated aeroplane designer ought to know, how to make aeroplanes which, when stalled, neither nose-dive nor spin, but sink on an even keel and obey their controls when required in the act of sinking. And no aeroplane ought to be given an Airworthiness Certificate for Civil Flying unless it has those qualities.

On an aeroplane so designed, unless a pilot is an absolute fool or culpably negligent, and flies into a house or a tree or into the ground, he cannot very well kill himself although he may perhaps land his machine so hard as to break the undercarriage or the fuselage. And even that is difficult with modern oleopneumatic undercarriages and improved construction.

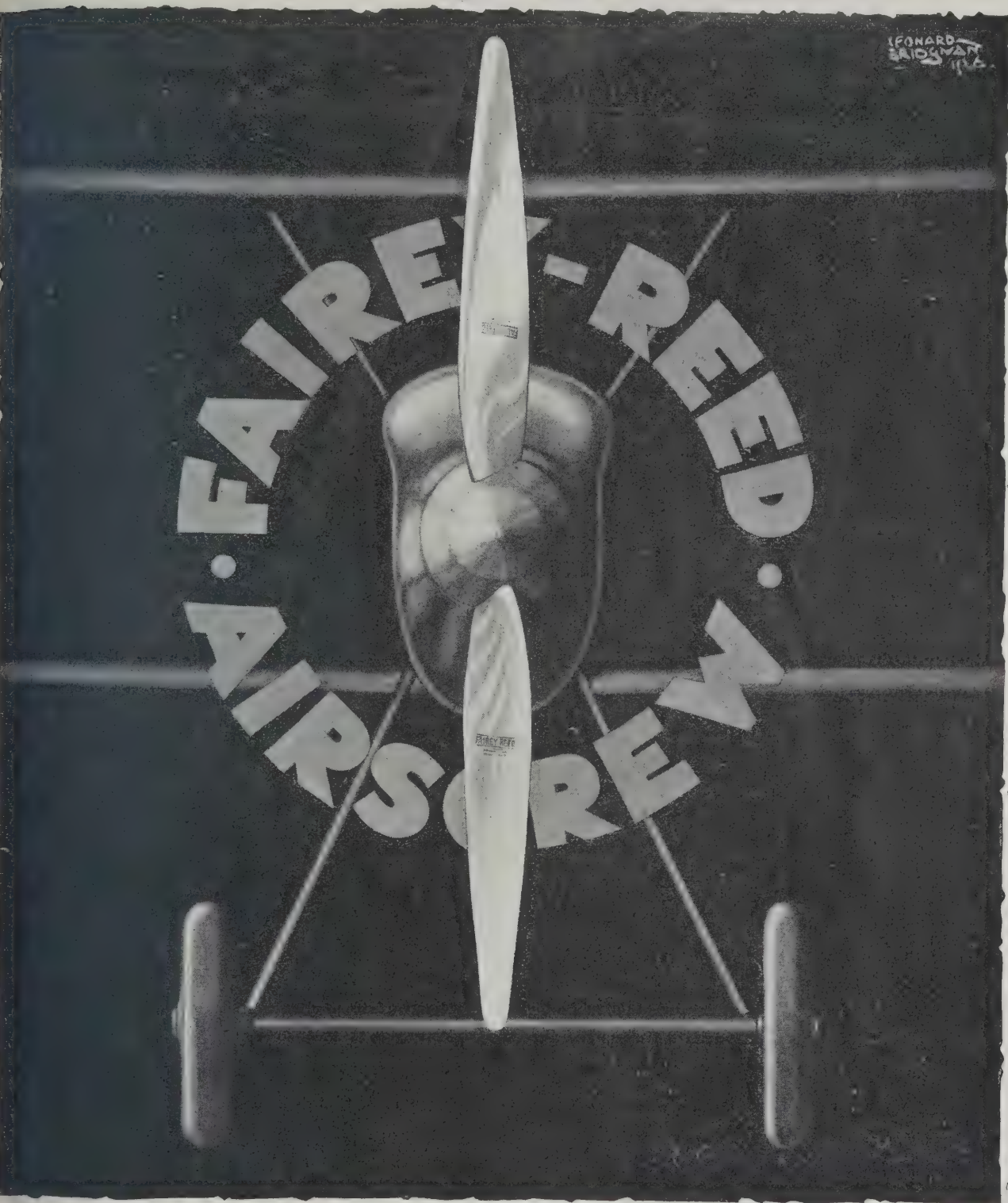
That is to say, we have now reached the stage when we can build a perfectly good bridge for the army to cross at no more expense than laying planks across or stretching tight-ropes. Or at any rate if it does cost more our good kind Parliament has voted all the money we want, and can spend conveniently, on building our perfectly good bridge. But the bridge is not being built.

The fact of the matter is that the great majority of the fatalities in the R.A.F. are not really due to errors of judgment on the part of the pilots at all, they are simply due to the fact that the pilots are still flying machines designed according to the aerodynamic ideas of 1916-17. And the error of judgment which causes their deaths is an error committed by the Air Ministry.—C. G. G.

POSTSCRIPT.

[Since this article was written an ill-informed writer has said in print that the R.A.F. system of training needs overhauling and suggests that our method of teaching pupils is to blame for the number of accidents. One can state definitely that our training system is as nearly perfect as is humanly possible. Occasionally a pupil who is lacking in intelligence must kill himself, no matter how perfect the system, but we have to thank the system for the fact that so many lives are saved.

What is the matter are the machines on which flying is taught. The rotary engine ought to have been abolished years ago. The time wasted in teaching its obsolete method of operation might be well spent on teaching something useful. But it is after that preliminary stage that the fatal accidents happen. And it is the machines onto which a pupil passes then which ought to be replaced.—C. G. G.]



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

ON THE MORNING LIVER.

Really, *The Morning Post* is a little tiresome at times. Of course, its title does suggest that liverish feeling which a much-advertised health salt is alleged to cure, and one would strongly recommend the Editor of that eminent paper and his aeronautical correspondent to try a small dose in their morning tea, as advertised. It might help them to see British Aviation without so many liver spots on it. But even as they are they need not be so silly in their antagonism to the R.A.F.

The latest of *The Morning Post's* bleats appeared on Aug. 26, when it said:—

Public indignation is growing at the inactivity of our air authorities, who permit America, France, Italy, and other countries to write their names in the book of aviation history while Britain does nothing.

Thereafter it set forth what it called "ten great pioneer flights by other nations" which are in preparation or being attempted. And it added:—

Mr. Cobham is the only British pilot engaged on any great achievement in practical aeronautics, and he, being unaided officially, cannot hope to accomplish feats worthy of ranking with those of the pilots of France, Italy, Spain, or America.

Presumably by this time everybody knows that *The Morning Post* has some kind of a personal feud against the R.A.F. in general and Sir Hugh Trenchard in particular, apparently originating from the fact that *The Morning Post* is so violently pro-Navy. But even personal feuds need not blind a newspaper to actual facts.

The function of the Air Ministry is to provide this country with the most efficient and most effective Air Force for the defence of the British Empire. That it has done. The R.A.F. is quite capable of taking on any other air force in the world, except the Americans, in a ratio of four to one. And the American Air Force, apart from the fact that we are never likely to fight it, is about half the size of ours.

Just why being unaided officially should prevent Mr. Cobham from hoping to accomplish feats as great as those of foreign pilots one cannot quite understand. And, anyhow, he has accomplished feats greater than any except perhaps that of the Marchese de Pinedo.

The Morning Post's statement is utterly untrue, because Mr. Cobham has received in all his recent journeys the greatest possible help from the R.A.F., and he has never forgotten to tell the World about it.

Apart from that, the Air Ministry could not give him any more help than he gets already from one source or another. His petrol and oil supplies are far more perfectly assured by the various petrol and oil firms than they could possibly be by any Government organisation, and his aeroplanes and engines would not be one whit better than they are if they were built to Government order instead of being built by the firms as commercial enterprises.

Of what *The Morning Post* calls "great pioneer flights" the first to be mentioned is the much-advertised "projected" flight by Captain Fonck from New York to Paris on a Sikorsky biplane. That happens to be a purely commercial enterprise for advertising purposes, and has no Government backing of any kind. What has happened to it may be read later on this page. And the fate of some of the other great flights appear elsewhere.

The various flights which have been or are being done by officers of the French *Service d'Aviation Militaire* are all done on completely faked machines which would be of no value whatever in actual war. These flights depend entirely on the reliability of the engines, and the Jupiter's 25,000-mile reliability test and the flight to Cairo and back show that it is actually more reliable than the French engines. Also, Mr. Cobham's flight to Australia shows that the latest Jaguar is equally reliable.

So far as genuine un-faked Service flying goes the French have never put up a performance which compares at all with the R.A.F.'s formation flight on D.H.9a's from Egypt to Nigeria and back, of the flight on Fairey III.D's with Napier's from Egypt to the Cape and back to England, or the flight on Supermarine Southampton flyingboats with Napier's from England all the way round the Mediterranean and back. Only unfortunately the British newspapers in general, and *The Morning Post* in particular, despite all its display of patriotism, never think of quoting these magnificent Service flights with standard Service equipment as an offset against these spasmodic spectacular flights by pilots of the various Mediterranean peoples which are held up to us.

Also it ignores the fact that any one squadron of the R.A.F. would be game to take on the job of fighting its way through all the Air Forces of all the Mediterranean peoples together. And would probably get through.

Furthermore, *The Morning Post* says:—

Before the war British pilots won international races, and her constructors produced machines which could fly as fast, as high, and as far as any others. When the Air Ministry first came into existence Britain led the way. In 1919 she broke the world's altitude record, and Alcock and Brown flew the Atlantic non-stop. Now she holds no world's air record, she wins no international air races, she makes no notable pioneer flights.

In the light aeroplane movement alone she has achieved some success.

The development of the movement in this country has been so rapid that it is already almost half as flourishing here as it was in Germany many two years ago.

Britain leads the world only in air expenditure. She spends more on aviation each year than any other country.

With the exception of the last sentence this statement is almost entirely inaccurate. Before the War British pilots hardly ever won an international race. We did win the Schneider Trophy in 1914, thanks to the enterprise of Mr. T. O. M. Sopwith, and the constructional ability of Mr. Fred Sigrist, and we won it in 1922, thanks to the Supermarine Company, but we never held any world's records.

It is entirely untrue that a British machine broke the world's altitude record in 1919. An Australian officer in the R.A.F. went up on a Service machine to a height at which his barometer showed a figure higher than the existing altitude record, but the performance was never passed as a record, and so far as one can discover the barograph was never calibrated or tested, nor were corrections made for the atmospheric conditions of the day. It was purely a personal claim without any authority behind it.

To say that the light aeroplane movement is almost half as flourishing here as it was in Germany two years ago is sheer nonsense. There is more flying done in England by flying clubs and private owners to-day than there is anywhere in the world except America. And in America the immense amount of civilian flying that is done is a commercial proposition owing to geographical conditions.

The one really accurate statement by *The Morning Post* is that we spend more on aviation here than any other country. We do. And we get full value for it. We have the finest Air Force in the world. And thanks to it *The Morning Post* can wear its grandmotherly nightcap in peace.—C. G. G.

THE FONCK FIASCO.

Some months ago it was announced that Captain René Fonck would attempt to fly from New York to Paris in an effort to win the Raymond Orteig prize. From the outset very few people placed much faith in the enterprise. The serious aviation people in France and America regarded the scheme as a joke, though naturally the lay Press devoted pages of pictures and letter-press to it.

For some reason known only to the instigators, one of whom was Mr. Jackson, an American citizen, who advanced a sum of \$175,000 towards the expenses of the flight, a Sikorsky biplane, designed by the Russian who built in 1913 the first four-engined aeroplane in the world, was constructed in America, and fitted with three Gnôme-Rhône Jupiter engines, designed by the Bristol Aeroplane Co. and built in France under licence.

To add to the international complications, a Lieutenant Snody, U.S.N., a Captain Berry, U.S. Army Air Corps Reserve, and a Lieutenant Noville, U.S. Navy Air Service Reserve, were announced as accompanying Captain Fonck as the crew.

Long before the machine was anywhere near completion, interviews with Fonck and other members of the crew, and display advertisements by various accessory firms who had apparently given equipment, fuel, and oil, appeared in American papers. All of which gave one the impression that the flight was all but accomplished.

Finally the Sikorsky made a test flight of twenty minutes with half load, everything was stated to be well, further interviews with the crew appeared, and a definite date announced for the departure.

But this tranquility could not last long. The machine having proved that it could fly, it was only left for the crew to fall out.

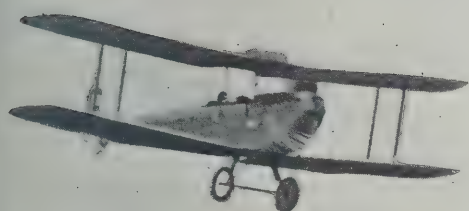
Captain Fonck desired that only he and Lieutenant Snody, the navigator, should make the trip. Captain Berry, who claims to have flown since 1910, to have 9,000 hours' flying experience, and to have served in France (he was shot down on his first flight over the lines) claimed the right to be co-pilot with Fonck. Lieutenant Noville, who belongs to the Vacuum Oil Company, resigned owing to a dispute over the oil to be used.

Now it is rumoured that the flight will take place next year, and that Commander Byrd, U.S.N., who flew over the North Pole, and Lieutenant Hinton, U.S.N.R.F., who was a member of the U.S.N. Atlantic Flight, will replace Captain Fonck and Lieutenant Snody.

It is perhaps well that the flight will not take place. Heaven knows what would have happened when the claims for the honour came to be thrashed out.

This should act as a warning to anybody other than Americans to refrain from becoming involved in American-financed schemes where possible personal glory is involved.

Captain Fonck deserves a certain amount of sympathy, in spite of having been a member of the French Parliament. But, at the same time, it is surprising that he should have thought of using anything other than French equipment. It would seem that in this case worldly gain out-weighed French pride to a point of ridicule.



DE HAVILLAND SUCCESES AT THE BOURNEMOUTH AIR RACE MEETING. 10 EVENTS—9 WINS.

SATURDAY, AUGUST 21st.

Light Aeroplane Club Instructor's Race.
1st CAPT. F. G. M. SPARKS ON MOTH.

Boscombe High Power Handicap.
1st Mr. A. S. BUTLER ON D.H.37.

Christchurch Sprint.
1st Mr. W. L. HOPE ON MOTH.

'Ensburry Park Low Power Handicap.
1st CAPT. G. de HAVILLAND ON MOTH

Bomb Dropping.
1st CAPT. F. G. M. SPARKS ON MOTH.

SUNDAY, AUGUST 22nd.

Private Club Handicap.
1st CAPT. G. de HAVILLAND ON MOTH

Private Owners' Handicap.
1st Mr. W. L. HOPE ON MOTH.

Light Aeroplane Club Members' Handicap.
1st Mrs. S. C. ELIOTT-LYNN ON MOTH.

Bomb Dropping.
1st CAPT. F. G. M. SPARKS ON MOTH.

THE DE HAVILLAND AIRCRAFT CO., LTD.

Stag Lane Aerodrome, Edgware, Middlesex.

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Telephone—Colindale 6160.

THE
KING'S CUP RACE, 1926
won by CAPT. H. S. BROAD
on a
DE HAVILLAND MOTH.

THE AUSTRALIAN AIR
DERBY, 1926, won by
Mr. ALAN J. COBHAM,
on a
DE HAVILLAND MOTH.



NEXT WEEK'S "DAILY MAIL" COMPETITION.

The Two-Seater Light Aeroplane Competition, for prizes to the value of £5,000 given by the proprietors of *The Daily Mail* will begin at Lympne Aerodrome on Friday of next week, Sept. 10, and will finish on Saturday, Sept. 18.

Full particulars of all the competitions and of the machines themselves will appear in *THE AEROPLANE* dated Sept. 8. That issue of *THE AEROPLANE* will be a complete guide to the Competitions.

Every machine will be described and illustrated so that readers will know as much as there is to know about the machines—with the exception of their actual performances under the conditions of the Competitions.

The programme for each day will be given with as much circumstantial detail as possible.

Thus readers will know exactly what the competitors are doing each day, and will be the better able to decide on which day to visit Lympne.

Also the rules and regulations of the Competitions will be discussed, in the hopes that readers may be helped in judging how much the Competitions are likely to help the progress of British Aviation.

In the meantime therefore in order to give some idea now of what is likely to be seen at Lympne it is only necessary to give a list of the machines which have been entered. These are as follow:

A. V. ROE & CO. LTD.:—(1) *Avro Avian*, *Armstrong-Siddeley Genet*, (2) *Avro Avis*, *Blackburne Thrush* or *A.B.C. Scorpion*.—The *Avian* is a brand new machine with wing attachments which allow her to be used either as a biplane for the Competitions in which high efficiency counts or as a low-wing monoplane for the speed events. She is a very neat job and will cause a great deal of interest. The *Avis* is a biplane built for the Air Ministry Competition in 1924 but has been altered to take the new three-cylinder *Blackburne Thrush* or the *A.B.C. Scorpion*. This machine won the Grosvenor Cup Race in 1924.

THE BLACKBURN AEROPLANE & MOTOR CO. LTD.:—*Blackburne Bluebird*, *Armstrong-Siddeley Genet*.—This is the *Bluebird* biplane also built for the Light Aeroplane Competitions in 1924. Its engine was not ready in time, so it did not appear, nor did it compete at the August Bank Holiday Meeting in 1925. It has been altered to take the new engine.

THE BRISTOL AEROPLANE COMPANY LTD.:—*Bristol Brownie*, *Bristol Cherub*.—This is a monoplane also built for the 1924 Competitions, in which it took second prize. Also it took second prize in the Grosvenor Cup Handicap and third in the International Handicap at the August Bank Holiday Meeting in 1925. The nose has been altered to take the *Mark III Cherub* instead of the original engine and the cockpits have also been altered.

THE CRANWELL LIGHT AEROPLANE CLUB:—(1) *C.L.A.4*, "P" engine. (2) *C.L.A.4*, *Bristol Cherub*.—These are entirely new biplanes of identical design and construction, except that one is fitted with Mr. Pobjoy's "P"-type engine which was described and illustrated in *THE AEROPLANE* recently whereas the other will have one of the new *Mark III Cherubs*. At the moment of writing the Pobjoy engine has not passed its type tests, so this machine has been withdrawn.

THE DE HAVILLAND AIRCRAFT CO. LTD.:—*D.H. Moth*, *Armstrong-Siddeley Genet*.—This is the well-known *Moth* biplane of 1925 design and construction, with the nose altered to take the *radial Genet* instead of the in-line *Cirrus*.

THE HALTON AERO CLUB:—*Two-seater biplane*, *Bristol Cherub*.—This is a new biplane with the latest type *Cherub*, the *Mark III*. Unfortunately at the time of writing there is some probability that it will not be finished in time for the Competition.

H. W. MARTIN:—*A.N.E.C. Missel-Thrush*, *Blackburne Thrush*.—This also is an entirely new biplane designed by Mr. Bewsher of the *A.N.E.C.* and mostly constructed by him. It also has the new three-cylinder *Blackburne* engine. There are many good points about it and it should do very well in the Competitions.

GEORGE G. PARNALL:—*Parnall Pixie III*, *Bristol Cherub*.—This is our old friend the monoplane which flew so well at Lympne in 1924 and 1925, but it now has the new *Mark III Cherub* engine.

THE ROYAL AIRCRAFT ESTABLISHMENT AERO CLUB:—(1) *Hawker Cygnet*, *Bristol Cherub*, (2) *Sirocco*, *Bristol Cherub*.—The *Cygnet* is a biplane which was presented to the *R.A.E.* Club this year by Messrs. Sopwith and Sigrist. This machine also was built for the 1924 Competitions. It has now been altered to take the *Mark III Cherub*. The *Sirocco* is a new monoplane built at the *R.A.E.* There is a possibility that it may not be finished in time for the Meeting.

THE SEVEN AEROPLANE CLUB:—*Short Satellite*, *A.B.C.-Scorpion*, (2) *Westland Woodpigeon*, *A.B.C.-Scorpion*.—These are both of 1924 vintage, but fitted with the new *A.B.C. Scorpion* engine. The *Satellite* is the monoplane with the all-metal fuselage commonly known as the "Tin Balloon," which won

the Impromptu Handicap on King's Cup Day at Hendon this year. The *Woodpigeon* is a biplane which was second in the Grosvenor Cup Race in 1924.

T. O. M. SOPWITH & F. SIGRIST:—*Cygnet II*, *Bristol Cherub*.—This is a sister machine to the one entered by the *R.A.E. Club* and it also has been altered to take the *Mark III Cherub*.

THE SUPERMARINE AVIATION WORKS LTD.:—*Supermarine Sparrow II*, *Bristol Cherub*.—This is a monoplane designed by Mr. Mitchell round the fuselage of the *Sparrow* biplane of 1924, and should be one of the most interesting entries.

Thus it will be seen that of the sixteen entries eight, or half, are already two years old. One is a year old and only seven are actually of new design. Of these seven one will not and two may not be able to compete so that we are only certain of four really new machines for a Competition in which £5,000 is being given as prizes.

There is also interest in noting the fact that of the seven new machines entered four have been designed and built purely as a sporting effort by officers and men of the *R.A.F.* or Civil Servants in the employ of the Air Ministry, namely two by the *Cranwell Club*, one by the *Halton Club*, and one by the *R.A.E. Club*. And one has been built to the order of a private individual, Mr. H. W. Martin. This leaves the *Supermarine Sparrow II* and the *Avro Avian* as the total effort of the entire British Aircraft Industry in the direction of progress in light aeroplanes.

Moreover, of the sixteen entries ten have been entered by Service Clubs or by private individuals and only six by Trade firms. It is true that three out of the ten have been entered by individuals who are interested in the Aircraft Industry. But even if one regard them as Trade entries, private enterprise is still responsible for half the entries.

One is perfectly convinced that the so-called light aeroplane of about the class of the *Moth* is going to be very much a commercial proposition in the near future. But in the meantime, as a leading light of the Trade said some months ago, the commercial manufacture of aircraft seems to be considered a better proposition than the manufacture of commercial aircraft. That is probably why the manufacture of commercial aircraft seems to be left almost entirely to the *de Havilland Company*, who will in due course reap their reward.

But quite possibly the whole history of the manufacture of aeroplanes in that class will be entirely revolutionised by the coming into existence of a new firm formed for the sole purpose of manufacturing aircraft of that class. That is what happened in the production of cheap bicycles and cheap motor-cars—and then the older firms followed the lead of the newcomers.

At any rate, the Competitions at Lympne ought to be well worth watching, if only in the hopes that some of these new machines which have been produced by private enterprise may spur the Trade towards real progress. But those responsible for *The Daily Mail* must feel rather disappointed at finding that the £5,000 which it so generously offered two years ago in the hopes of furthering the progress of British Aviation has produced such small immediate results.—C. G. G.

THE GENET ENGINE.

One has heard doubts expressed as to whether the *Armstrong-Siddeley Genet* engine would be ready to take part in the Lympne trials. The general impression seemed to be that entrants would not receive their engines until about three days before the competition.

Therefore it is satisfactory to record that all *Genets* have been delivered and one at least has taken the air.

The *Avro Avian*, fitted with a *Genet*, was tested on Sunday by Mr. Bert Hinkler and on Monday with a heavy passenger and full load it made an extended flight, getting off the ground in twice its own length. It alighted in the style made popular by box-kites, twelve years before *Pterodactyls* and *Auto-giros* were imagined.

The *Genet* started easily and ran well both throttled down and at full throttle. It resembles a baby *Lynx*. The particular specimen weighs 166 lbs. and develops 71 h.p.

THE BOURNEMOUTH MEETING.

The Royal Aero Club announces that it has distributed the following prizes in connection with the Bournemouth Air Race Meeting held on Aug. 21 and 22, 1926:—

D. A. N. Watt, £100; London Aeroplane Club, £80; W. L. Hope, £65; A. S. Butler, £50; G. de Havilland, £45; The Royal Aircraft Establishment Aero Club, £30; Mrs. S. C. Elliott-Lynn, £20; The Midland Aero Club, £20.

As usual, that wonderfully auriferous vein in the Aero Club's prize-mine known as the Wakefield Lode has been tapped for the major prizes. But the Club's millionaire Patrons and Vice-Presidents and what-nots have, also as usual, failed to show a pay-streak. At any rate, all that is yellow is not gold.



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Designers and Constructors of "CIRRUS" Aero Engines.
120/140 h.p. "AIRDISCO" Aero Engines.
300/330 h.p. "NIMBUS" Aero Engines.



A.D.C. SUCCESSES.

At Bournemouth Air Race Meeting, August 21st and 22nd, A.D.C. "CIRRUS" and "NIMBUS" Aero Engines obtained 9 WINS out of 10 EVENTS.

OTHER RECENT SUCCESSES ARE :—

1st KING'S CUP AIR RACE, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Capt. H. S. Broad.

1st AUSTRALIAN AIR DERBY, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Alan J. Cobham.

The A.D.C. "CIRRUS" engine has been adopted by

THE SIX ENGLISH LIGHT AEROPLANE CLUBS.

THE AUSTRALIAN AIR FORCE,

THE IRISH FREE STATE AERO CLUBS,

THE AUSTRALIAN AERO CLUBS,

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

Aug. 26

GENERAL DUTIES BRANCH.—The following Plt. Offs. are promoted to the rank of Flg. Off.:—G. D. Harvey (May 15); J. H. McN. Campbell (June 17); P. McK. Terry (June 17). The following are transferred to the Reserve:—CLASS A.—Flt. Lt. C. Jackson (Aug. 23). CLASS C.—Flg. Off. D. G. Pinnell (Aug. 21); Flg. Off. A. M. Rowe (Aug. 21).

The S.S. comm. of Plt. Off. on probation A. H. Campbell-Horsfall is terminated on cessation of duty (Aug. 14); Plt. Off. A. E. Hamilton resigns his S.S. comm. (July 8).

ACCOUNTANT BRANCH.—Plt. Off. on probation T. P. E. Campbell is confirmed in rank and promoted to the rank of Flg. Off. (Aug. 10).

MEDICAL BRANCH.—Flg. Off. J. Parry-Evans is granted a perm. comm. in this rank (Aug. 25).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. on probation in the General Duties Branch in the ranks stated:—CLASS A.—Flg. Off. J. R. Foster (Aug. 24). CLASS A.A.—Plt. Off. P. D. V. Hackett (Aug. 11).

The following relinquish their comms on completion of service:—Flg. Off. J. R. Cox (Apr. 20); Flt. Lt. F. G. Saunders, M.C. (Apr. 20); Plt. Off. R. J. Ewins (June 19); Flt. Lt. C. H. Young, M.B. (July 13); Flg. Off. J. H. Huxley, D.F.C. (Aug. 4); Flg. Off. H. W. Owen (Aug. 7); Flg. Off. P. T. Hubbard (Aug. 21). The comm. of Plt. Off. on probation W. Dougall is terminated on cessation of duty (July 28).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Miss K. M. Beall resigns her appointment as Staff Nurse, acting Sister (Aug. 13).

Appointments.

Week ending Aug. 30.

GENERAL DUTIES BRANCH.—Squadron Leaders W. V. Strugnell, M.C., to No. 21 Group H.Q., West Drayton, 1/9. D. Stewart, M.C., A.F.C., to Armament and Gunnery School, Eastchurch, 23/8. H. S. Powell, M.C., to H.Q., Coastal Area, 9/8. C. H. Elliott-Smith, A.F.C., to No. 56 Sqdn., Biggin Hill, 15/8. E. D. Atkinson, D.F.C., A.F.C., to No. 25 Sqdn., Hawkinge, 24/8. A. P. Maurice, D.F.C., to Night Flying Flight, Biggin Hill, 22/7. K. H. Riversdale-Elliott, to School of Army Co-operation, Old Sarum, 12/8.

Flight Lieutenant J. G. Horne, to R.A.F. Depot, Uxbridge (Non-effective Pool), 1/8.

Flying Officers J. D. I. Hardman, D.F.C., to No. 16 Sqdn., Old Sarum, on transfer to Home Estab., 22/9. R. W. E. Bryant, to No. 5 F.T.S., Sealand, 6/8. F. W. W. Wilson, to M.A.E.E., Felixstowe, 1/9. H. L. Beatty and (Hon. Flt. Lt.) G. N. Carroll, to No. 480 Flight, Calshot, 1/9. E. S. C. Vaughan, M.C., to remain at No. 7 Sqdn., Bircham Newton, instead of to Armament and Gunnery School as previously notified. R. Y. Eccles, to remain at No. 111 Sqdn., Duxford, instead of to No. 5 F.T.S. as previously notified. C. J. Clark, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 30/7.

MEDICAL BRANCH.—Flying Officer E. A. Rice, M.B., to Research Laboratory and M.O.S. of I, on appointment to a S.S. Comm., 16/8.

STORES BRANCH.—Flight Lieutenants G. F. Law, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 6/8. W. A. Glasper, to Air Ministry (D. of E.), 1/9.

ACCOUNTANT BRANCH.—Flying Officer J. Charles, to H.Q., Egypt, 13/8. Pilot Officer R. J. Wishlade, to No. 7 Sqdn., Bircham Newton, 19/8.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident near Worthy Down, Winchester, to a Vickers Virginia, of No. 58 Squadron, Worthy Down, on Aug. 23, Plt. Off. Hugh James Fitzgerald Kempthorne, the pilot and sole occupant of the aircraft, was killed.

A report in *The Times* of the evidence at the inquest, stated that this was Mr. Kempthorne's "first flight in sole charge of a machine." This seems unbelievable, for nobody would be allowed to do his first solo in such a huge machine, with so many complicated controls. But, even so, an explanation is needed as to why an obviously inexperienced pilot was allowed to fly a big bomber without a second (and experienced) pilot to take control in case of need.—C. G. G.]

Army Co-operation.

In an article on Army Training in *The Times* of Aug. 27 a military correspondent writes:—

The umpiring, under the Chief Umpire (Colonel A. P. Wavell), was a special feature of the operations. It goes a long way towards solving the difficult problem of giving due credit to artillery fire, but it involves the use of more aircraft than the R.A.F. may be able to spare in some commands. A board, like a cricket score-board, placed on the ground at the gun position, shows the exact location, by co-ordinates on the map, of the target engaged. The nature both of the target and of the projectile employed is also indicated by ground signals. These are easily read by umpire's airmen, who carry off the news at once and drop messages at the closest umpire (recognised by his white cap-cover) to the target. I watched the system at work, and it is the nearest approach—in such a battle area—to solving a difficult problem for which no solution could be found during last year's training and manoeuvre season.



AT SINGAPORE.—H.M.S. "Hermes," the ugliest ship afloat and the first vessel specially designed by the Admiralty as an aircraft carrier. She has a displacement of 10,950 tons and her complement includes 130 R.A.F. personnel and 20 aircraft. She has one long flying deck with single funnel, tripod mast and all superstructure carried right over on her starboard beam. She has been at Singapore for a long time while her aircraft have been doing photographic surveys of the country round for our Naval Base.

The air work seemed to me to be excellent. It was watched by Air Commodore Pitcher, who is now in charge of the group of squadrons co-operating with the Army, Wing Commander Barratt being in command of the squadron that provided the co-operating machine on this occasion.

The Fleet Air Arm.

The Times of Aug. 30 states:—

When it appears from a report of a medical board that an officer of the Royal Navy or Royal Marines attached to the R.A.F. for service with the Fleet Air Arm is permanently unfit for full flying duties, it is unlikely to be fit for such duties within the period of attachment. The Air Ministry will arrange with the Admiralty for the officer to be surveyed by the naval medical authorities with a view to determining his fitness for general naval duties, in order that his disposal may be decided upon.

When an officer still requires medical treatment at the termination of his attachment he will normally be disposed of to the nearest naval hospital as soon as he is fit to travel, but exceptions may be made. This rule, states a new fleet order, if such transfer would aggravate his condition, or if it appears that he would be benefited by remaining under Air Force treatment.

[Well! Anything would be better than treatment at the average Naval hospital by Naval farriers. In fact, in the phrase "will normally be disposed of to the nearest Naval hospital" the word at might well be used instead of to—apart from the appalling Admiralty grammar.—ED.]

An Admiralty Appointment.

The Daily Telegraph of Aug. 24 states:—

Captain C. P. Talbot, D.S.O., commanding the aircraft-carrier *Hermes*, Mediterranean Fleet, has been selected as Head of the Naval Air Section, Admiralty Naval Staff, in succession to Captain T. F. P. Calver, D.S.O.

The Imperial Defence College.

Vice-Admiral Sir Herbert Richmond, K.C.B., has been nominated to be the first Commandant of the Imperial Defence College.

Vice-Admiral Sir Herbert Richmond has been Commander-in-Chief, East Indies Station, since 1923. From 1909-12 he commanded the *Dreadnought*, the *Furious*, and the *Vindictus*. He was Assistant Director of Operations from 1913 to 1915 and liaison officer with the Italian Fleet in 1915.

He commanded the *Commonwealth*, the *Conqueror*, and the *Erin* in the Grand Fleet and was appointed Director of Staff Duties and Training in 1918.

He was President of the R.N. War College, Greenwich, from 1920 to 1923.

Seven Years.

In September, 1919, a considerable number of officers in the R.A.F. on the completion of their temporary War Service were appointed to Short Service Commissions for seven years on the active list.

A certain number of these officers have been awarded Permanent Commissions in the meanwhile. But it now remains to be seen, in September, 1926, how many of these valuable officers who saw service in the War 1914-18 and have seen service in those other theatres of war in which the R.A.F. has operated since 1918, will be allowed to pass into the Reserve.

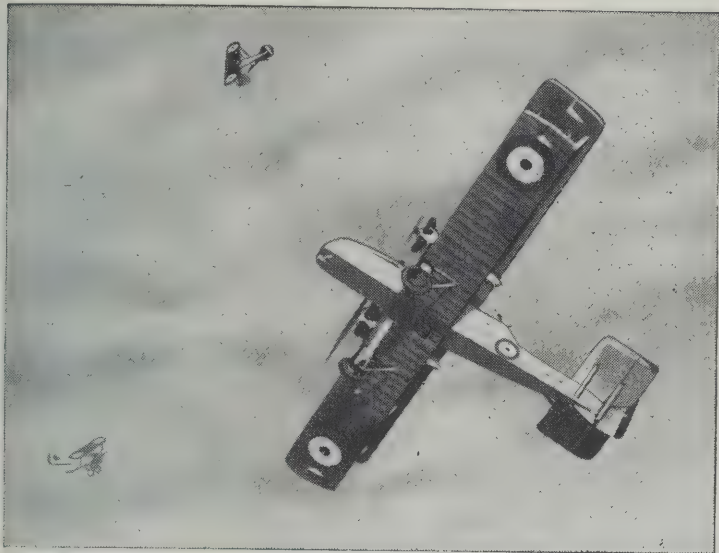
The point of view of the Air Ministry that a large reserve of Air Force officers must be maintained is quite comprehensible, but at the same time it seems bad policy to deprive young Service of a number of the War-time pilots who build up the fighting traditions of the R.F.C.

R.A.F. SPORTS AND PASTIMES.

The Halton Aero Club.

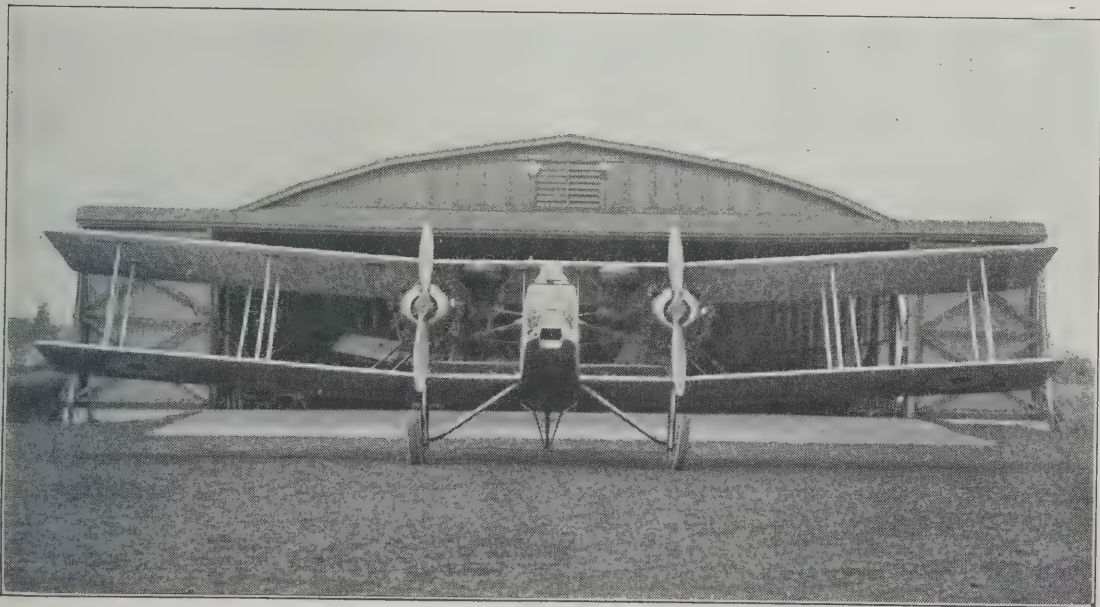
The fact that one of the entries for this year's light aeroplane competition at Lympne stands in the name of the Halton Aero Club has brought to light the fact that there is a No. 1 School of Technical Training, R.A.F., what is certainly one of the largest aero clubs in the country.

The Halton Aero Club was formed about nine months ago with the object of increasing the interest in their work of the Aircraft Apprentices at the School, and also of improving the liaison between branches of the staff by providing a com-



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mon interest in the application to practical ends of their various spheres of activity. It is the object of the club to design and build aircraft and to enter them in such competitions as are open to them.

The Club has now over 1,100 members, and funds are raised by the issue of 5s. and 2s. 6d. shares. The apprentices themselves have already voluntarily subscribed over £170 in this way.

The H.A.C. 1, which it is hoped to complete in time for the Light Aeroplane Competition beginning on Sept. 10, has been designed by the school educational staff, and built by the apprentices in the school workshops under the supervision of their instructors. It is difficult to conceive of any better method of inducing an intelligent interest on the part of the Halton apprentices in the art of aeronautical engineering than this. And it is very much to be hoped that the Club's first machine will prove to be as highly successful an effort as were the machines similarly produced at Cranwell and the R.A.E.

The Club has as its President Air Vice-Marshal C. L. Lambe, C.B., C.M.G., D.S.O., Commandant of the School. The Honorary Secretary is Mr. A. C. Kermodie, and Flg. Off. C. H. Latimer Needham is Hon. Treasurer.

The R.A.F. Swimming Association.

The final results of the London District (R.A.F.) Swimming Championships were as follows:—

Relay Race.—Winner, Biggin Hill, Time 77 secs. Second, Northolt and Uxbridge tie.

Plunging.—Winner, Uxbridge (Flg. Off. Lee), Distance 47 ft. 9 ins. Second, Coastal Area H.Q. (Cpl. Ham).

Diving.—Winner, Biggin Hill (AC.2. Richards). Second, Uxbridge (Flg. Off. E. G. Whinney).

100 Yards.—Winner, Kidbrooke (AC.2. Letchford), Time, 68 3/5 secs.

50 Yards.—Kidbrooke (AC.2. Letchford) and Northolt (I-AC. Wykeham-George) Tie. 30 secs.

Inter-Service Cricket.

The cricket match between the Royal Navy and the Royal Air Force was played at Portsmouth on Aug. 23 and 24, and resulted in a draw. The scores were:—

ROYAL AIR FORCE.—Wing Cdr. Blount c Bartley b Rae 59, b Jameson 13; Sq. Ldr. Livock b Rae 0, not out 17; Sq. Ldr. Roberts b Brooks 39; Sq. Ldr. Leacroft c Rae b Brooks 24; Flt. Lt. Boumphrey st Bartley b Cochrane 53, c Bartley b Brooks 33; Flt. Lt. Wigglesworth b Brooks 0; Flt. Off. Holmes c Bartley b Rae 48, b Gornall 23; Flg. Off. Marson c Bartley b Rae 6, c Rae b Cochrane 20; Plt. Off. Kellet, lbw b Brooks 0; Plt. Off. Utley b Brooks 18; I-AC Jennings not out 4.

Byes, etc., 6 and 5.

Total (first innings), 257. Total (second innings) (four wickets), 111.

ROYAL NAVY.—Comdr. S. S. Bonham-Carter c Blount b Utley 17, not out 46; Lt.-Comdr. B. C. Brooke st Livock b Blount 12, b Blount 9; Lt.-Comdr. E. L. D. Bartley c Livock b Blount 16, c Livock b Jennings 78; Maj. R. A. D. Brooks, R.M., st Livock b Blount 33, b Roberts 5; Lt. J. P. Gornall b Blount 8, c Jennings b Blount 2; Lt. S. Boucher c Utley b Blount 106, c Marson b Blount 8; Lt. R. J. Shaw lbw b Blount 41, b Utley 2; Lt. K. Hunt, R.M., lbw b Roberts 2, b Roberts 4; Pmstr-Lt. C. H. Rae st Livock b Utley 2, not out 36; Mdshn J. F. Cochrane not out 3; Mdshn. T. G. C. Jameson c Jennings b Blount 9, c Jennings b Utley 16.

Byes, etc., 7 and 22.

Total (first innings), 256. Total (second innings) (eight wickets), 223, and innings declared closed.

AIR DISARMAMENT.

The *Morning Post* Correspondent in Geneva in a message dated Aug. 26 states:—

The question of air disarmament was reduced to an absurdity to-day at the Preparatory Commission's meeting when the French forced the passage of a proposal whereby all civilian aircraft as well as all personnel, including civilian pilots, sportsmen, mail flyers, and the entire personnel, including men, women, and children employed by aviation industries, should be included among the factors which go to determine the air war strength of countries.

The resolution which brought from the British and the American representatives a categorical refusal of acceptance, was adopted by 11 votes to 6, with Spain, Holland, and Germany joining the opposition and Japan and Chile abstaining.

The British and Americans announced that they would reserve the right to submit a third minority report, the others having resulted from decisions respecting naval and international control questions. The divergencies between the French bloc and the English-Americans have reached a state in which the bitterest polemics and sarcasm are features of every session.

THE MONGOL MENACE.

Gradually the daily newspapers are awakening to the Russian (Japhetic) menace which this paper has been preaching for the past five or six years. The *Morning Post* has recently published a great deal (including much nonsense) about the Soviet Air Fleet. But now *The Daily Telegraph*, a most solid and unemotional paper, has produced certain information which is really of value because, instead of raising an alarm about impossible fleets of aircraft, it discloses certain definite facts concerning the human element behind the Oriental alliance, and indicates the psychological momentum which is moving the nations concerned.

The *Telegraph's* Riga correspondent, who deserves to be complimented on recognising the significance of the event, sent the following message on Aug. 26, and it was published on Aug. 28:—

RIGA, Aug. 26.

A banquet has been given in honour of aviation workers of the Soviet Union, Turkey, Persia, and Afghanistan, by the Soviet Society "Aviakhim"—i.e., the Friends of Aviation and Chemical Defence—which were present Araloff, a member of the Council of the Foreign Commissariat, Unslicht, the deputy of the President of the Revolutionary Military Council; Baranoff, the head of the Soviet Aviation Teimur Khen, the Persian Minister; and the Turkish and Afghan Ministers.

Unslicht, in greeting the representatives of Persia, Afghanistan and Turkey, said that Soviet aviation did not only aim at defending the country, but also tried to establish good friendship between the nations bordering on the Union. They wished Persia, Afghanistan and Turkey to make good progress in aviation, and so be brought into closer relations on the cultural field. He was sure that the aviators of the eastern countries would fly to Russia, and that they would be received with the same cordiality as the Russian aviators were during their flights.

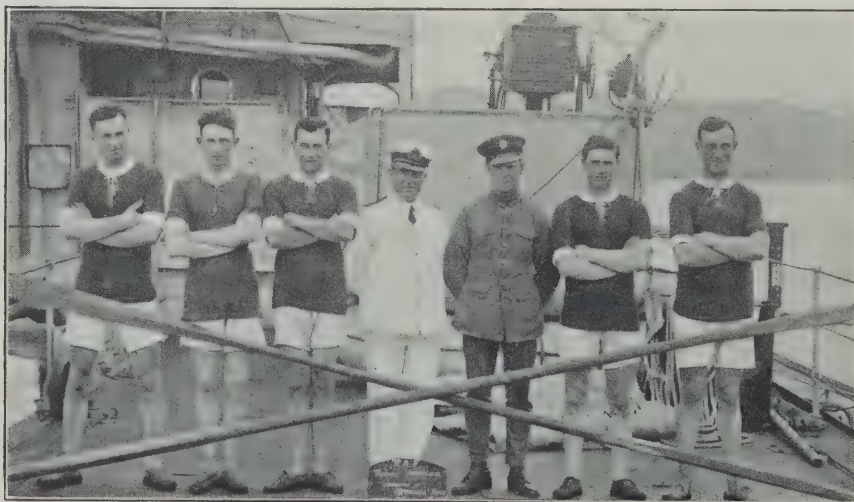
Baranoff thanked the representatives of Turkey and Persia for the cordial reception of the Soviet aviators at Angora and Teheran. He reminded his audience that the first flight to foreign countries had been made by Megeraup in 1923 to Afghanistan, where he was sincerely welcomed, and said that Russia expected a return visit.

The Persian Minister, in reply, said that the visit of the Russian aviator had helped to develop friendly relations between the two countries. "We eastern nations," he said, "are looking with eyes full of hope to Russia, and await from there aid in making our country prosperous. We hope to attain the position which we deserve with the help of the Soviet Union."

Zekki Bey, the Minister of Turkey, stated that the activity of the "Aviakhim" had played an important part in the establishment of cultural relations between Russia and her neighbours. The Soviet aviators who visited Angora roused a real enthusiasm among all classes of society. The success of Soviet aviation was regarded as their own because Russia was a sincere friend to Turkey. The neighbours of the Union would follow the latter's example, and would endeavour to develop their own aviation.

The Chargé d'Affaires of Afghanistan, Rakhimulla Khan, expressed his admiration at the success of Soviet aviation, and stated that the Afghan aviators who were being trained in Russia would contribute to strengthen the ties between the two countries.

One may add that the Russians and Turks are definitely square-heads; that though the true Afghan (or Pathan) is as definitely Nordic, there is a strong Tartar admixture in Afghanistan; and that the Persians are a weak long-head people of Semitic origin who can be used by a Tartar minority for their own purposes.—C. G. G.



FLEET CO-OPERATION.—The R.A.F. racing whaler's crew of No. 444 Flight on board H.M.S. "Vindictive," at Wei-hai-wei. This crew, drawn from a Unit only 18 strong, won the Artisans' event out of eight starters, in the Whaler's race, in the Annual China Squadron Regatta on July 29 and 30.

The names, from left to right, are:—L-AC. Percival (Stroke), L-AC. Worth, L-AC. Keast, Mr. Phillips, Commissioned Gunner (Coach), AC.1. Killick (Cox), L-AC. Cawte, Sgt. York.

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THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Aug. 29.

The total flying time for the week was 56 hrs. 20 mins.

The following members had flying instruction:—Miss O'Brien, H. Petre, T. W. Eady, R. L. Portway, M. P. Susman, Col. Farfan, G. Black, H. Solomon, B. B. Tucker, E. K. Blyth, G. C. Bonner, D. Usher, J. S. Boulton, D. P. H. Esler, R. C. Woodcock, R. A. St. John, O. H. Best, A. J. Richardson, H. R. Presland, H. F. Wight, C. H. Tutt, T. C. Angus, E. D. Moss, J. C. Crammond, G. Lyon, R. Malcolm, A. L. A. Petty, C. E. Murrell, J. C. Elford, E. A. Lingard, V. H. Doree, P. F. England, H. Wood, D. L. Stalley, A. Lees, G. M. Hall.

The following members flew solo:—N. J. Hulbert, H. Petre, G. H. Craig, E. E. Stammers, E. S. Brough, A. Lees, A. G. D. Alderson, B. B. Tucker, W. Hay, E. K. Blyth, O. J. Tapper, G. N. Warwick, Miss O'Brien, E. D. Moss, R. Malcolm, J. S. M. Michie.

The following were given joy-rides:—B. D. Waugh, D. C. MacLachlan, F. Yates Brown, Miss Fletcher, G. W. West, I. D. Lloyd, L. G. Valpy.

[There is a certain humour in H. Petre having flying instruction. Major Petre was one of the earliest Brooklands pilots, having built his own machine there in 1910. He went to Australia as instructor to the Australian Army in 1913. And he commanded No. 1 Squadron of the Australian Flying Corps, the first British flying unit in Mesopotamia, during the early part of the War 1914-18 in that area. Further, Mr. T. C. Angus, also under instruction, happens to have been awarded the Distinguished Flying Cross.—C. G. G.]

The Lancashire Aero Club.

Report for week ending Aug. 20.

Owing to bad weather flying has been possible on only four days. Machines in use, LV and M-Q (Moths) and OK (Avro-Renault).

Mr. Stack gave instruction to Messrs. Costa 5 hrs. 10 mins., Honneyball 1 hr. 45 mins., Wade 1 hr. 35 mins., Heys 1 hr. 10 mins., Collinson 1 hr. 10 mins., Crossthwaite 1 hr. 10 mins., Fallon 1 hr. 5 mins., Nelson 40 mins., Pitman 40 mins., Goodyear 35 mins., Patteaux 30 mins., Foxcroft 30 mins., Gerrard 25 mins., Barker 10 mins., Leeming 10 mins. Total 17 hrs. 10 mins.

Mr. Cantrill gave instruction to Miss Brown 1 hr. 10 mins., Messrs. Honneyball 20 mins., Scholes 15 mins. Total 1 hr. 45 mins.

Mr. Scholes gave instruction to Mr. Marsland 20 mins.

Solo flights by Messrs. Leeming 5 hrs. 5 mins., Michelson 2 hrs. 10 mins., Wilkinson 2 hrs., Agar 1 hr. 45 mins., Goodfellow 1 hr. 45 mins., Hardy 1 hr., Pitman 35 mins., Goodyear 15 mins., Cantrill 10 mins., Williams 10 mins. Total solo 14 hrs. 45 mins.

Tests completed 2 hrs. 10 mins.

The following had joy-rides with Messrs. Stack, Goodfellow and Leeming:—C. Agar 1 hr. 50 mins., P. Heys 1 hr. 10 mins., H. Tattersall 35 mins., Miss P. Nuttall 25 mins., A. Goodfellow 20 mins., Miss N. Roberts 20 mins., Mrs. R. Williams 15 mins., J. Bradley 15 mins. Total time flown in week 37 hrs. 5 mins.

Mr. Pitman, who is also a member of The London Club, made his first solo on Thursday. Mr. Pitman learned to fly in 1919, but has not flown since, except for a little "dual" in the last week or so. A cross-country trip to Southport was made on Wednesday.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Aug. 29.

The total amount of flying carried out during the week was 32 hrs. 45 mins.—29 hrs. 35 mins. on LY and 3 hrs. 10 mins. on I.X. The latter was again put on service on Sunday morning.

Dual 21 hrs. 40 mins. Solo 8 hrs. 40 mins. Passenger (with Mr. Parkinson) 2 hrs. 15 mins. Test 10 mins.

The following members flew under instruction during the week:—Sir Joseph Reed, Messrs. Middleton, Shaw, Gilmore, Bruce, J. M. Kennedy, E. C. Kennedy, Turnbull, Stawart, Prendergast, Palmer, J. M. Davidson, V. S. Davidson, Whitfield, H. Ellis, Miesagaes. Secondary Dual Dr. H. L. B. Dixon.

The following flew solo and with passengers:—Mr. H. H. Leech, Dr. Dixon, Mr. C. Thompson (with Mrs. Heslop, Miss Storey and Mr. Campbell), Mr. W. Baxter Ellis (with Miss Ainley, Mr. H. Ellis and Mr. J. G. Edmundson), Mr. P. F. Heppell (with Mr. Ogdon), Mr. L. Smith, Mr. F. Howard Phillips (with Mr. A. Bell), Mr. N. S. Todd (with Mr. Syngé and Mr. Goodbody).

Passengers who flew with Mr. J. D. Parkinson:—Mrs. Gilmore, Miss E. Bruce, Miss Haig, Mr. Priestley and Mr. Parker.

THE FIRST ANNUAL FLYING MEETING.—A very satisfactory number of entries has been received for the Club's Meeting on Sept. 4. They include those of the following:—

Mrs. Elliott Lynn, Air Commodore J. G. Weir, whose machine will be flown by Mr. A. N. Kingwill, Mr. L. L. Irvin, Mr. Broad, who will fly the King's Cup Moth, and Mr. Courtney, who will pilot the Nimbus-Martinsyde entered by Lt.-Col. M. O. Darby.

The London Aeroplane Club have entered one machine which will be flown in several events by Mr. F. G. M. Sparkes and Mr. R. Malcolm, and Mr. E. D. Moss will fly as passenger with Mr. Sparkes.

The Yorkshire Aero Club are sending both of their machines, but it is not known yet who will be the pilots. The Club is very grateful for the support of the London and Yorkshire Clubs and regrets very much that the Lancashire Club cannot send a machine.

The Officer Commanding Royal Air Force Training Base, Leuchars, has very kindly arranged for a Flight of Fairey Flycatchers to attend, and two Hawker Woodcocks, which will be visiting Cramlington at this time, will be seen also.

The Newcastle and District Motor Club have arranged a very interesting series of events in which members will take part riding motor-cycles.

There will not be a dull moment throughout the meeting and there is promise of complete success.

The Midland Aero Club.

Report for week ending Aug. 28.

The total flying time for the week was 20 hrs. 32 mins.

The following members received flying instruction from Mr. McDonough:—E. T. Beard, C. Fellows, A. R. Gibbons, C. Burrows, S. H. Smith, J. Brinton, H. Smith, H. Willis, H. Beamish.

The following members made solo flights:—E. J. Brighton, H. Willis, C. Perry, R. L. Jackson.

Three test flights took 35 mins., two passenger flights 30 mins. On Monday Mr. McDonough flew from Bournemouth to Castle Bromwich on EBLT.

Tuition is closing down from Wednesday, Sept. 1, till Wednesday, Sept. 15, to enable the Staff to take a well-earned holiday.

Considerable progress is being made in reconditioning the hangars and buildings on the aerodrome for occupation again, and it is expected that the Club will move into their new quarters during the next fortnight.

The Hampshire Aeroplane Club.

Report for week ending Aug. 28.

This week has been very gratifying indeed to all connected with the Club, as the total flying time exceeded 22 hrs.

For a newly formed Club possessing at the moment only one instructor, this is a really good performance, and is testimony to the untiring energy of Mr. G. I. Thomson.

Total Flying Time, 22 hrs. 12 mins.. Instruction Flying, 21 hrs. 12 mins.; Passenger Flying, 1 hr.

The following members received instruction flights:—Miss Home 1 hr. 15 mins., Maj. Jenkins 2 hrs. 10 mins., Lt. Trait, R.N., 1 hr. 17 mins., Lt. Graham, R.N., 1 hr., Wing Cdr. Wyllie 35 mins., Flg. Off. Clarkson 10 mins., Messrs. Fry 2 hrs., Dobson 1 hr. 32 mins., Bound 1 hr. 30 mins., Keeping 1 hr. 30 mins., Simmonds 1 hr. 32 mins., Nicholson 55 mins., Dickson 50 mins., Stokes 25 mins., Heathcote 25 mins., Bowen 32 mins., Perfect 32 mins., Henderson 32 mins., Fowler 25 mins., Kerry 22 mins., Southcliffe 15 mins., Mansbridge 15 mins., Bishop 47 mins., Burry 12 mins., Heathcote 12 mins., Sanderson 10 mins.

The following members received passenger flights:—Miss Dobson 12 mins., Miss Fry 12 mins., Mrs. Thomson 15 mins., Professor J. O. Thomson 10 mins.

Absentee Aeroplanes.

Cricklewood, Aug. 30.

Sir,—With reference to the remarks in your issue of the 25th on the question of whether the newly founded Aeroplane Clubs closing down instruction and attending the Bournemouth Flying Meeting was justified,—I think you will agree that had it not been for the "Moth Clubs" attendance the meeting would not have been so successful.

Looking through a list of the names I should imagine that more than half of the pilots that flew at the meeting were attached to the newly founded clubs and many entirely trained by them. In case of the London Aeroplane Club the two instructors, and I believe nine or ten of its members, took part either in the racing, or in the journey there and back by air, thus giving its members a racing and a cross-country experience which should prove most valuable. Incidentally the weather in town happened to be quite unfit for instructional purposes.

From the records at the Club (London) it appears that the flying time accomplished by its members at the week-end at Bournemouth was well up to the standard, and I also find that this standard has enabled the club to finish its first year with over 1,200 hours of flying or just over an average of 100 hours a month and this notwithstanding the fact that during the greater portion of this period no more than one machine was available.

I am confident that the pilots did not go to Bournemouth for any other reason than in the highest interests of aviation, and I sincerely hope that your comments will not have the effects of causing clubs to abstain from supporting further meetings. I personally think that such meeting are a distinct benefit to aviation in that its possibilities are more directly brought before large bodies of the public than by any other means.

(Signed) "A LONDON CLUB MEMBER."

[One agrees with the statements of fact in the foregoing letter. But the remarks to which it refers concerned matters of principle. The Clubs were not subsidised by the Air Ministry to provide attractions for air-race promoters, nor to give cross-country and racing experience to a minute minority of the members. They were founded to give opportunities of individual flying to the greatest possible number of the members. And if the machines are taken away week-end after week-end to race-meetings, and to the Pageants, Displays and what-nots of other Clubs, then the machines are not being used for the benefit of the majority of the members.

Naturally one is all in favour of racing and of inter-club meetings and of cross-country tours and so forth. But the requirements of the majority of club members come first. One merely wanted to know whether the majority of club members had been consulted before the Committees of the various clubs allowed the machines to be taken away just at the times when most members might be expected to want to use them.—C. G. G.]

ROYAL PATRONAGE.

His Majesty the King of the Belgians has granted his High Patronage to the International League of Aviators, an Association which was founded last spring by the co-operation of the *Vieilles Tiges* and the *Pionieri Italiani Dell' Aeronautica*, the French and Italian pre-War aviators' societies.

The King of the Belgians was the first Sovereign to own an aeroplane.

GERMAN AIR LINE EQUIPMENT.

The following list shows the present equipment of the Deutsche Lufthansa A.G., the German air line company resulting from the amalgamation of the Deutscher Aero Lloyd and Junkers Luftwerkerhr AG.:—Nine Dornier Komet IIIs (Rolls-Royce Eagle), two Dornier Komet IIs (Rolls-Royce Falcon), four Dornier Wals (two Rolls-Royce Eagles), sixteen Fokker F.IIIs (Rolls-Royce Eagle), nineteen Fokker F.IIs (Siddley Puma), two Albatros L.73s (two B.M.W.IV), one Albatros L.59 (Rolls-Royce Falcon), forty-eight Junkers F.13s (B.M.W. or Junkers), nineteen Junkers G.24s (three B.M.W. or Junkers), ten Junkers A.20s (B.M.W. or Junkers), and three Junkers K.16s (Siemens radial), making a total of 133 aircraft of 11 different types.

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| TWO YEARS AGO | A Rolls-Royce Aero Engine in a Fokker Aeroplane flew from HOLLAND to the EAST INDIES (10,000 miles). |
| ONE YEAR AGO | A Rolls-Royce Aero Engine in a Handley-Page Aeroplane flew from BRUSSELS to the BELGIAN CONGO (5,084 miles). |

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C.F.

EXPLAINING A PARACHUTE STUNT.

Newspaper paragraphs and photographs in the daily Press have made much of late of what is supposed to be an epoch-making invention by one Harry Douchett, Chief Machinist's Mate in the U.S. Navy. This alleged invention consists of a parachute which when released supports the whole aeroplane, complete with personnel. And it is reported that a U.S. Navy Reserve pilot, Mr. R. F. Oelze, successfully tested a parachute of this nature.

It is said that the pilot shut off his engine, released the parachute, and that the machine landed 67 seconds later 3½ miles to the west of the starting point. The further statement is made that the pilot, aeroplane and equipment weighed 1,800 lbs. and that "the only damage was a broken undercarriage and a snapped propeller blade."

Three-and-a-half miles in 67 seconds represents a speed of approximately 180 miles an hour. Either there must have been a hurricane blowing or else the gliding speed of the machine with the parachute must have been very much higher than the gliding speed of any known machine without a parachute. So one assumes that the figures are wrong.

In any case, the idea is quite old, and, apart from that, it is useless. Therefore readers of this paper who may be assailed, as one has been oneself, with questions as to why the Air Ministry does not equip all its aeroplanes with parachutes and so save the machines as well as the crew, may be glad of a few facts on which to base their answers.

In the first place Mr. Irvin of the Irving Air Chute Company actually built a parachute for this identical purpose in 1919 and tested it by throwing a Curtiss fuselage overboard with it from a Martin bomber. Also Mr. Calthrop in this country had in hand the designs for such a parachute some time during the War 1914-18, so this latest invention is particularly ancient even for a newspaper stunt. As a matter of fact one gathers from photographs received that the great demonstration in the States had something to do with the scenario of a film called "Wings," and precious little to do with serious aviation.

Secondly, a parachute is practically useless for such a purpose. If an aeroplane caught fire in the air, or were set on fire by enemy action, the last thing one would want to do would be to sit by the fire in the machine. If a machine broke in the air the chances are that the parachute would merely get wrapped up in the wreckage and the whole thing would come down in a heap. Much the same thing would happen if any attempt were made to release the parachute

if the machine merely got out of control and dived, for the unopened parachute would certainly foul the tail unit and make any control impossible.

There is only one way in which such a parachute can be released with anything like safety and that is by stalling the aeroplane and releasing the parachute at the moment when the machine is sinking before it actually dives. This would need very considerable skill and judgment on the part of the pilot for if he were a second too late the machine would stick its nose down and dive, and the parachute would spread itself over the tail, in which case the probability is that the crew would be unable to get out, even if equipped with individual free parachutes of the Irving type.

Therefore the only circumstances in which such a parachute could be used would be in the case of an ordinary engine failure, all the rest of the aeroplane being intact and under full control.

In case of engine failure over ordinary country a glide under proper control is vastly preferable to any parachute descent, for then the pilot, if he is any use, can choose his own landing place, whereas with a parachute the machine might crash into buildings or any other obstruction.

In the case of engine failure over heavy clouds through which the pilot could not see to choose a landing place, then he and his passengers would do very much better to come down with individual free parachutes than to come down with the machine. A person in a whole aeroplane sinking uncontrolled below a parachute which hit a mountain-side or crashed into a building would probably be crushed to death in the wreckage, whereas with an individual parachute he would stand a very much better chance of getting away with mere bruises, or probably entirely unharmed.

Consequently it may be taken, without any fear of contradiction from people who really know, that a parachute capable of carrying a complete aeroplane comes under the generic heading of dud stunts.—C. G. G.

A TWO THOUSAND MILE PROSPECTING TOUR.

A report from the Queensland and Northern Territory Aerial Services Ltd. states that Mr. L. J. Stark, an American mining engineer, has recently completed an eight days' tour by air in Central Australia. In the course of his tour Mr. Stark covered 2,000 miles of country which is inaccessible to wheel traffic and would normally have to be visited by camel transport. Mr. Stark considers that the air-taxi service has saved him twelve months.

The party left Cloncurry on May 25 and flew 630 miles to Newcastle Waters on the same day. Newcastle Waters and Brunette Downs were used as operating bases for flights into the interior.

Landings were made at Powell's Creek and Banka Banka. At Powell's Creek the natives cleared away uneven patches on the landing ground by means of spoons and tin dishes.

From Banka Banka a direct flight was made to Brunette Downs, where petrol supplies were replenished.

During these flights careful compass courses were taken over almost unknown country with a few prominent landmarks as navigation guides.

The return journey started from Newcastle Waters and was made via Brunette Downs and Alroy Downs.

The report concludes:—

As a commercial flight of a pioneering and explorative nature in which the machine was hired with a definite commercial object in view this trip must rank as one of the most valuable yet undertaken in Australia. It has proved that aircraft can safely and reliably penetrate into districts which are as yet but little known, and by furnishing reports and photographs of the country traversed pave the way for a more detailed inspection from the ground. This pioneering trip also emphasises the fact that there are still vast tracts in the interior which are yet waiting to be thoroughly explored.

It was a most noticeable fact that no white women were met with at the central outposts visited. Without making the country safe for women the interior cannot be settled. Aerial transport, however, which means a speedy link with civilisation and the fast conveyance of passengers, doctors, medicine and urgent supplies, is able and willing to alter the present isolated condition of things.

A LOSS TO THE U.S. NAVY.

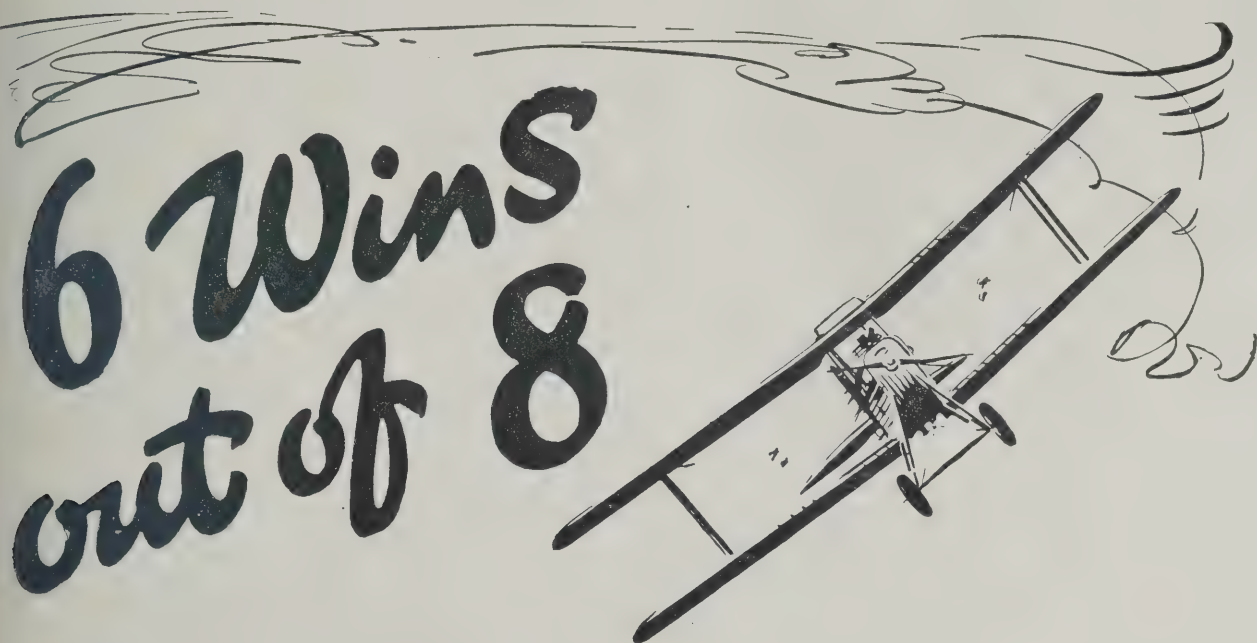
Commander John Rodgers, U.S.N., who piloted a P.N.9 flying boat from San Francisco to Hawaii last summer, was killed in an air accident at the Naval Aircraft Factory, Philadelphia, on Aug. 27. The machine he was flying fell into the water, which was only three feet deep, but both he and his mechanic were strapped in and could not escape from the machine, so they were drowned.

Commander Rodgers was an able pilot and a very gallant officer, as was shown by his actions when brought down at sea on the way to Hawaii. The flying-boat travelled 450 miles and he kept up the spirits of his crew while adrift for ten days. Having brought his ship to safety, he refused to leave her till she was successfully beached.

One tenders the sympathy of British aviators to the U.S. Naval Air Service.—C. G. G.



MERELY A STUNT.—A model of the much-boomed parachute to save a whole aeroplane. The idea is quite old and quite useless.



Shell Petrol supreme at Bournemouth Aviation Meeting

Once more Shell Petrol has gained a notable series of victories in the air. On the 21st and 22nd of August, out of the 8 races held at the Bournemouth Summer Aviation Race Meeting, the following 6 were won on Shell:

Instructors' Scratch Race.

Won by Capt. Sparks flying a De Havilland Moth.

Christchurch Sprint.

Won by Mr. W. L. Hope flying a De Havilland Moth.

Ensburry Park Handicap.

Won by Capt. De Havilland flying a De Havilland Moth.

Private Club Handicap.

Won by Capt. De Havilland flying a De Havilland Moth.

Private Owners' Handicap.

Won by Mr. W. L. Hope flying a De Havilland Moth.

Light Aeroplane Club Scratch Race.

Won by Mrs. Elliott Lynn (London Club) flying a De Havilland Moth.

In 4 of these races the second place was also gained on Shell Petrol.

The supremacy of Shell Petrol in the air has been established by a long record of successes, both in the great Pioneer trans-Continental Flights and on the Commercial Airways of the World.

FILL UP WITH SHELL FROM THE SEALED SHELL PUMP.

SHELL

The Well-balanced Petrol



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AT A SPANISH AERODROME.

The following description of a visit to the new aerodrome at Seville was written by a former member of the W.R.A.F. and appears in the August number of the W.R.A.F. Old Comrades' Association Leaflet:—

One day last year, when I was in Seville with a friend and my brother, having nothing better to do, we clambered into an ancient barouche, and with a noble wave of the hand, told the driver to drive us where he liked, for as long as he liked.

We ambled pleasantly through the narrow streets—past the beautiful Public Gardens, full of rose bushes and white doves—across the Guadalquivir, and out into the rather uninteresting surrounding countryside. After driving for some time alongside a high wall, we drew up outside some very handsome iron gates. I noticed that the design embodied spread wings. A little soldier stood sentry, and above his head was a large notice to the effect that the "Entrada" was "prohibita."

Our driver jumped down from his perch, and with an air of triumph bowed us out of the carriage. Somewhat astonished, we turned to the sentry, who saluted us and shouted to other soldiers within, who threw open the gates. We were received with many salutes and bows. My friend and I returned the compliment as graciously as possible.

My brother, dreadfully embarrassed, kept muttering, "You know, we shouldn't be here at all! Didn't you see the notice at the gate? We shall all be arrested or something." But by this time we were so gratified with our charming reception that nothing would induce us to leave. We were led to a Serjeant, who, with a sweeping bow, invited us to follow him.

He could only speak in Spanish, but we gathered we were inspecting the latest, most wonderful, most beautiful, most grandiose, most superb aerodrome, not only in Spain, "mas en el mundo!" And indeed, it was quite possible.

For over two hours, the indefatigable little Serjeant towed us round—including our driver, who beamed with triumph and delight at the success of his surprise.

First of all we were shown sheds of all sizes, filled with 'planes, including two monster Handley-Pages. [There appears to be a mistake here, as there are no Handley Pages in Spain, so far as can be ascertained.—ED.] We were pointed out a Squadron of Bristol Fighters getting "tuned up" for a flight to Morocco that evening. (The Spanish were having a busy time against the Riffs.) There were many French machines as well.

But it would be difficult to describe adequately the wonderful barracks,—low, white-washed buildings in the Moorish style. We were shown the Men's Mess at dinner hour. A vast long hall, with bright tiles on the floor and a charming fountain in Faience, surrounded by ferns, at one end.

The Serjeant shouted an order as we entered. To our complete surprise, every man sprang up and saluted us! My brother turned purple, but I think we acquitted ourselves very nicely. We gravely bowed slowly to the middle, to the right, and to the left. Then they all sat down again.

(I must say in parenthesis, that the well-known courtesy of the Spanish people cannot be exaggerated. From the moment we landed in Spain until we embarked again we met with exquisite courtesy from every soul we met. At first we felt quite gauche and clumsy, but I think we gradually acquired a little of the pervading graciousness, and remembered, for instance, to thank a beggar gravely for his good wishes.)

We were shown the hospital—white and spotless—with its charming garden, full of roses, iris and carnations. Here the Serjeant invited us to rest on one of the many little seats (inlaid with tiles depicting various types of aeroplanes) while he gathered a large bouquet for us and a button-hole for my brother.

We saw the Officers' Mess—a typical Spanish house, with the interior courtyard ("patio") filled with plants, and in the centre a graceful fountain playing. The Serjeant explained that no officer was in residence yet, as the Aerodrome was not yet completed. But King Alfonso, a week previously, had been entertained to dinner there—the first meal to be held.

The place was beautifully furnished. The Serjeant took special pride in pointing out the electric light fittings, in mother-of-pearl.

There is no time to describe further what we saw. I assured the Serjeant somewhat sadly that I felt sure we had nothing as beautiful

in England. He was obviously gratified, but remarked that he thought the English and the French, the latter especially, had a poor idea of Spain's prowess in the air.

Conversation was very difficult between us. I attempted to tell him that during the War I was a member of the Women's Royal Air Force. He listened politely, but I am afraid he was thinking: "This lady is either mad, or unaware of the extraordinary things she is saying in her execrable Spanish."

We parted after a great exchange of bows, compliments, salutes, good wishes and general pleasantness on either side. It remains one of my most pleasant memories of our journey in Spain.

ABORTIVE RECORD ATTEMPTS.

On Aug. 24, three attempts were made to beat the world's record for distance covered in a straight line by three different French pilots.

M. Pollon, accompanied by Adj. Vancaudenberg and Lieut. de Vaisseau Amaurich, left Le Bourget on an Amiot-S.E.C.M. biplane (600 h.p. Renault engine) with the object of flying to the Persian Gulf and possibly beyond. He was forced to land at Linz, in Austria, with plug trouble.

Lieut. Challes and Capt. Weiser left shortly after M. Pollon on a Breguet XIX biplane (500 h.p. Hispano-Suiza engine) flying in the same direction. He ran into bad weather over Asia Minor and turned back, finally landing at Bucharest.

Captains Lemaitre and Barrés left Villacoublay the same morning on a Breguet XIX biplane (500 h.p. Renault engine), also flying in the same direction, but were compelled to return almost immediately.

On Aug. 25 Captains Lemaitre and Barrés made a second attempt but were forced down with plug trouble at Vienna and the machine was badly damaged.

M. Pollon and Lieut. Challes will return to Paris and make further attempts.

A HIGH SPEED CIRCUIT.

On Aug. 24 Capt. Pelletier Doisy and M. Carol left Villacoublay on a Potez biplane (450 h.p. Lorraine-Dietrich engine) at 05.30 hours and reached Tunis at 19.40 hours, having made one intermediate landing at Rome. At roughly 21.00 hours he left Tunis and arrived at Casablanca at 08.30 hours, having flown through the night. Approximately at 10.00 hours he left for Paris and reached Bordeaux at 19.00 hours. At 19.50 hours he left Bordeaux and landed at Villacoublay at 23.14 hours.

The flight lasted exactly 41 hours 45 minutes, of which 34 hours 57 minutes were spent in the air, and the 6 hours 48 minutes spent on the ground were mostly occupied in obtaining meals, filling up, etc. Shell aviation spirit and Shell oil were used throughout.

The total distance covered was 3,750 miles.

A NEW HEIGHT RECORD.

On Aug. 24 M. Callizo, the present holder of the World's Height Record, made an attempt to improve on his existing record.

From Buc aerodrome, and flying a Bleriot-Spad 61 biplane (450 h.p. Lorraine-Dietrich engine with a Rateau supercharger) he reached a height variously recorded on his two barographs of 12,800 m. (41,988 ft.) and 12,500 m. (41,660 ft.).

His previous record made on Oct. 10, 1924, on a Gourdon-Leseurre monoplane (300 h.p. Hispano-Suiza engine with a Rateau supercharger) was 12,066 m. (40,783 ft.).

THE AUSTRALIAN AIR ESTIMATES.

The Manchester Guardian announces that the Australian Commonwealth Parliament has voted over £800,000 to the Air for 1926-27. Of this sum, £250,000 is to be spent before June 30, 1927, on the purchase of new aircraft, and over £90,000 is to be allocated to civil aviation.



NOT A CASTLE IN SPAIN.—The great aerodrome at Seville, as projected, and very much as it is in fact.

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["Flight" photograph.]

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 27; Tuesday, 23; Wednesday, 27; Thursday, 27; Friday, 27; Saturday, 31; Sunday, 13.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 89, passengers 634, freight 21 tons.

AIR UNION:

Paris—London: Machines 38, passengers 162, freight 10½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 24, passengers 86, freight 3 tons.

SABENA:

Brussels—London: Machines 12, passengers 71.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 2, passengers 4.

PRIVATE:

Machines 10, passengers 3.

Total number of trips by British Machines, 98, carrying 637 passengers. Foreign Machines, 77, carrying 323 passengers.

Comparative Figures:

Week ending Aug. 29:

Machines, 175; Passengers, 960; Crews, 214; Total personnel, 1,174.

Corresponding week, 1925:

Machines, 168; Passengers, 968; Crews, 243; Total personnel, 1,211.

Corresponding week, 1924:

Machines, 137; Passengers, 669; Crews, 165; Total personnel, 834.

Corresponding week, 1923:

Machines, 121; Passengers, 578; Crews, 194; Total personnel, 772.

Corresponding week, 1922:

Machines, 159; Passengers, 506; Crews, 272; Total personnel, 778.

Corresponding week, 1921:

Machines, 103; Passengers, 427; Crews, 129; Total personnel, 556.

Corresponding week, 1920:

Machines, 104; Passengers, 219; Crews, 129; Total personnel, 348.

[It will be noted that less passengers were carried during this week than during the corresponding week last year. This is possibly due to the fact that at this time of the year so many people seem to prefer to swim across.—G. D.]

Croydon Notes.

Considerable controversy rages round the identity of the first pilot to fly from London to Paris when civil flying opened on Aug. 25, 1919. Last week one referred to a machine starting from Hounslow for Paris with a load of grouse and other commodities, and one said that one believed the first pilot was Mr. Jerry Shaw. In actual fact the pilot was Mr. "Bill" Lawford, now a C.A.T.O. at Croydon. Mr. C. R. McMullin brought the machine back.

Earlier in the day, however, Mr. Jerry Shaw left Hendon for Paris with a Major Pilkington. Not having a passport, and being Jerry Shaw, he did not land at Hounslow for Customs clearance, as he was afraid he would be delayed and so would not be the first across.

By way of historical interest one will endeavour to obtain the official record and times of all machines and pilots which flew to Paris on that day.

While on the subject reference should be made to the constant service of Mr. R. H. MacIntosh. He joined Handley Page Transport in the first week of Civil Aviation and he has been at it ever since. There was a break of about a fortnight when the air lines closed down to blackmail the Government into subsidising them (in other words, a strike of air line owners). Also he obtained six months' leave some time ago to go to the assistance of King Ali of the Hedjaz where he was badly let down, and the last three months of this leave was spent on cross-Irish Channel work from Carlisle to Belfast.

Mr. MacIntosh does not seek publicity, and the result is that one has to find out facts for oneself about him, and one is indebted to Mr. Lawford for reminding one that there is no other pilot now flying on the air lines with such a long and continuous record as Mr. R. H. MacIntosh. No doubt this will result in the usual flow of claims as to who has done the most hours, but Mr. MacIntosh's record of continuous service is unassailable.

The Argosy made a trip to Berlin and back last week carrying 18 passengers each way. On the outward journey the passengers included the Management of Imperial Airways, Ltd., who were bound for a "through-ticket" conference in Berlin.

The Argosy left Croydon at 08.15 hours and reached Berlin at 16.43 hours. She returned next day with members of the poor old T.U.C., leaving Berlin at 09.10 hours and arriving

at Croydon at 19.38 hours. Mr. F. L. Barnard was the Argonaut.

The result of the "through-ticket" conference is that arrangements have been made among the European air lines on the famous Tram-Omnibus-Tube system. That is to say, through tickets can now be taken so that a passenger can travel anywhere on one through ticket, even though several different companies' machines are used.

On Saturday a "mayday" alarm was received on the radio, causing great excitement in the Channel. "Mayday" (*m'aidez*) is the S.O.S. of the air, and so people thought that a machine was down in the Channel. Actually Mr. Crew, on the Supermarine Swan, who was carrying out a practice on behalf of Imperial Airways Ltd. to test the arrangements for getting to a machine which had alighted in the Channel, had alighted purposely about 10 miles off Dover, dodging with skill all the Channel swimmers.

Mr. Drew is at present running the weekly Southampton-Guernsey service, as Mr. Bailey, the usual pilot, is away on leave.

[One is told that the tugs took a couple of hours to find Mr. Drew—which is not encouraging.—ED.]

Lieut.-Colonel Minchin, and Messrs. MacIntosh and Olley, have been to Biarritz with a W8b and a Vulcan, which have been hired by a hyphenated American millionaire, Mr. Albert Lowenstein (no relation to the Princess Lowenstein-Wertheim), who, in connection with the making of dollars, is running a private air line all over Europe.

The machines fly to such places as Berne, Brussels, and Barcelona, and bring loads of business people to Biarritz to confer with Mr. Lowenstein, after which they are returned to their homes. Evidently time is money to Mr. Lowenstein, for it is understood that the machines are being hired at the rate of 6d. per mile for each seat (whether occupied or not) in the machine. This one believes is the standard price. Any school or choir can hire Argosies for its annual outing at that price—though perhaps the Directors of Imperial Airways might make a reduction in such a deserving cause as a P.S.A.

At A.D.C. Aircraft, Ltd., Mr. Frank Courtney has been testing a Nimbus-Martinsyde and a Nimbus D.H.9. Mr. Perry is at present abroad erecting and testing machines which have been sold by A.D.C. Aircraft to a Baltic Power.—G. D.

THE INTERNATIONAL AIR TRAFFIC CONFERENCE

On Aug. 27, the 16th Conference of the International Air Traffic Association opened in Berlin. Representatives of 23 air traffic companies were present. Imperial Airways, Ltd., were represented by Major G. E. Woods Humphery, Lt.-Col. Burchall, and Major Beaumont (the firm's solicitor).

Dr. Brandenburg, who occupies the post in the German Ministry of Communications corresponding to that of Director of Civil Aviation in Great Britain, greeted the delegates on behalf of the Government. He described the occasion as of particular significance, as for the first time since commercial air traffic had existed the representatives of German aviation were taking part in the deliberations with the knowledge that German aircraft were not shackled by restrictions.

Herr Wronsky, Director of the Deutsche Luft-Hansa, was elected President of the Congress.

Subjects discussed were the adoption of a draft waybill for airborne freight which the Deutsche Luft-Hansa proposed should be universally adopted, and the drawing up of a winter time table for international air lines.

MR. COBHAM RETURNS.

Mr. Alan J. Cobham, who with Sgt. Ward and Mr. Capel is flying on a De Havilland 50J (Armstrong-Siddeley Jaguar) from Melbourne to London, started on Aug. 29. He reached Adelaide from Melbourne in 5½ hours.

On Aug. 30 he flew via Maree Town to Oodnadatta (South Australia).

He expects to reach Port Darwin on Sept. 2, whence he will try and lower the existing record for the course to London, which is 29 days.

A GUBERNATORIAL TOUR.

On Aug. 24, the Governor-General of Australia, Lord Stonehaven, who is making a tour of inspection in the Northern Territory of Australia by air, arrived at Port Darwin from Newcastle Waters and Cloncurry in the special D.H.50a (Puma engine) owned by the Australian Air Board.

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Extract from :-

OFFICIAL  REPORT.

Parliamentary Debates
HOUSE OF COMMONS.

VOL. 192, No. 18. THURSDAY, 25th FEBRUARY, 1926.

"The SECRETARY of STATE for AIR
(Sir Samuel Hoare):

... Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing.

Lieut.-Commander BURNEY: With full service load.

Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance of about 800 miles, spending as much as 12½ hours continuously in the air

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HEIGHT OVERALL ... 17'-3"
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AIRCRAFT IN PARLIAMENT.

PRIVATE OWNERS.

In the House of Commons on July 15, CAPT. GARRO-JONES asked the SECRETARY OF STATE FOR AIR whether he is aware that the main deterrent to large numbers of potential amateur flying men is not only the first costs but the fear of accidents to their machine and of consequent upkeep costs; what would be the cost of providing an all-in insurance policy, covering pilot, machine, and third parties, for a period of 12 months; and whether he has considered the practicability of offering to defray the whole or part of such insurance costs in the case of pilots who have first qualified at an approved school?

SIR P. SASSOON: As the answer is rather long I will, with the hon. and gallant Member's permission, circulate it in the *Official Report*.

Following is the reply: As regards the first part of the question, the information at the disposal of the Air Ministry is by no means conclusive that the main deterrent to private flying is that stated by the hon. and gallant Member; but I do not doubt that the question of upkeep and, in particular, of possible liability in case of accident must weigh to a considerable extent with potential pilots.

As regards the second part, I have made inquiries of the British Aviation Insurance Group and understand that it would not be possible for the insurance companies to adopt a flat comprehensive insurance scheme of the kind suggested. The rate of premium would depend necessarily upon the applicant's flying record, the amount and nature of the flying which he intended to carry out, the type of aircraft to be flown, the locality, and other variable factors.

As regards the last part, I am ready to consider any proposal designed to encourage private flying, but I feel grave doubts as to the practicability of adopting the particular suggestion made by the hon. and gallant Member.

In the House of Commons on July 22, SIR WILFRED SUGDEN asked the SECRETARY OF STATE FOR AIR what steps he was taking to give commercial facilities to civilian air travel on an equal scale to that given in France, Germany, and the U.S.A.

The Secretary of State for Air replied that so far as aerodrome facilities, wireless, meteorological and other ancillary services for the assistance of commercial flying were concerned this country was not behind the other three countries mentioned. As regards subsidies, France and Germany allotted substantial subsidies to commercial aviation, but so far he knew no subsidies were given to air transport companies in the United States.

SIR HARRY BRITAIN asked whether our civilian traffic was not far ahead of that in the United States, to which Sir Samuel Hoare replied that he would rather not make comparisons. The United States really had no civilian air traffic, only a mail service.

BRISTOL CRAFTSMANSHIP.

Pride of workmanship and finish is apparent in every Bristol aero-engine, and it is this attention to the most minute detail which contributes so largely to the uniform

success of the Bristol engines. That purchasers and users of the engines appreciate this skill and care in production is clear from communications received from time to time.

In the course of a communication received from a well-known aeroplane firm in the United States, dated July 1926, the following remarks are made:—

We are pleased to advise that the Cherub engine arrived some time ago in fine condition. We have immediately installed same in our little monoplane fuselage and have tested it in our shop. The motor runs fine and we must admit embodies some excellent workmanship. . . . After looking the motor over we are frank to say that we do not believe it possible to turn out such a high grade product (in U.S.A.) without employing special skilled labour. As you perhaps know American labour does not produce anything so precise in every detail . . . we could not guarantee to turn out such a neat looking job.

To do so would necessitate the employment of expert mechanics, probably men who have gained their experience in Europe. Such men demand a high salary and this would bring the manufacturing cost of the engine very high.

This is a remarkable tribute to Bristol workmanship, Bristol quality and Bristol determination to turn out engines which defy criticism in every detail.

To say that an aeronautical product is constructed "Bristol fashion" means as much to-day among flying folk as the phrase "all ship-shape and Bristol fashion" meant to seafaring folk in the days when the Navy was our first line of defence.

SAND.

In the days of our youth most of us have passed through a period when our chief joy was the making of mud pies or at any rate sand castles. But few of us continue in that line of business development to its ultimate power as it can be. Among the few apparently Mr. Algernon Lewis Curtis of the Westmoor Laboratory, Chatterton, Cambridge, and his catalogue recently issued should be in the hands of everybody in the Aircraft Industry.

Mr. Curtis explains in a very interesting and lucid introduction the various uses of sand, clay and "economic minerals." And will interest the average reader of this paper to have a clear definition of the fact that sand is the product of rocks pulverised by natural or artificial changes, whereas clay includes those types of earth whose chief property is plasticity when moistened with water.

Incidentally one learns that sand is needed for refractory brick. One had always been under the impression that it was the brick layer who was refractory rather than the brick itself.

Both sand and clay come into the scope of any aircraft firm which does any casting work and of course sand is used in the sand-blasting process which is now commonly used on aircraft fittings. The use of all the different kinds of sands and clays as set forth in Mr. Curtis's catalogue make really interesting reading and one recommends any budding engineer to write and ask for a copy.—C. G. G.

Bournemouth Aviation Meeting.

August 21st-22nd, 1926.

Every one of the events at this meeting was won on one or other of the several standard grades of—



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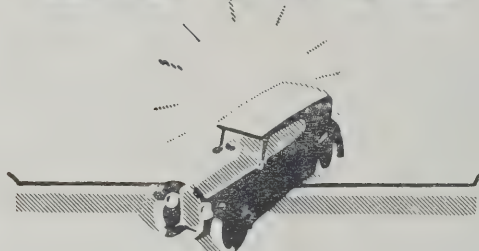
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PETROL ECONOMY.

Very great improvements have been effected in the fuel consumption of air-cooled aero-engines during the past few years. Not very long ago it was accepted that any air-cooled engine was necessarily extravagant in both fuel and oil. To-day the full-throttle fuel consumption of such an air-cooled engine as the Bristol Jupiter is only slightly higher than that of a few of the most economical types of water-cooled aero-engines. The fact that it is slightly higher, however, does not necessarily imply—as might hastily be assumed—that the air-cooled Jupiter is, in service, less economical than the best water-cooled type.

There are two reasons why the Jupiter engine is even better than the full-throttle consumption figures would suggest. Firstly it has been designed to give the most economical fuel consumption over the normal cruising throttle range, and not merely at full throttle. Secondly it is claimed that the air-cooled type of engine on the test-bed is not susceptible to such accurate control of temperature as can easily be secured with a water-cooled engine by careful adjustment of the water flow, etc. In practice a pilot cannot achieve so nice a temperature control in the air as can be secured on test, and therefore it may be expected that test-bed conditions with an air-cooled engine approximates more closely to those met with in practice, which means that the air-cooled engine will more nearly achieve its test consumption in the air than will the water-cooled type.

In any case experience shows that the Bristol Jupiter in service has a very low fuel consumption. In the test flight made early this year for Imperial Airways on the Bristol Bloodhound, analysis of the Telmeter charts shows that throughout the whole 225 hours of the test r.p.m. averaged 1,475 and B.H.P. 300, and the overall average consumption was 22½ gallons per hour, or 0.564 pints per B.H.P. hour which is more like a test-bed, than a service, figure, and is a good deal lower than one would care to use in estimating the service consumption of most water-cooled engines.

A HAPPY AUGURY.

Now that Mr. Cobham is on his way home from Australia there is particular interest in a cable which was received from him by Armstrong-Siddeley Motors Ltd. prior to his start. This reads as follows:—

To Siddeley, London.
Have just dismantled engine after 160 hours' running after flight from London to Melbourne first time cylinders removed since start flight discovered engine in perfect condition. Bearings same as when started and during whole of flight engine never failed us once. Congratulations on supreme reliability Siddeley-Jaguar engine.—COBHAM.

An engine which has done 160 hours' running and is then found to be in first-class condition is probably an even better engine than when brand new, in that all its wearing parts are properly bedded home and have acquired that curious form of surface-hardening which never seems to be attainable by any means other than actual wear. Consequently we may look forward to Mr. Cobham's arrival with even more confidence than one felt in the prospects of his arrival in Australia. And there was very little doubt even then.

A COME-BACK.

Mr. F. Warren Merriam, formerly Captain R.A.F., who is well known to all the old-timers of aviation, has set up as an Aeronautical Consultant at 64, Victoria Street, S.W.1. His telephone number is Victoria 8428.

Mr. Merriam will be remembered as one of the Bristol Company's instructors in the very early days of aviation, both at Larkhill and at Brooklands. Quite a number of the most senior officers of the R.A.F. to-day received their baptism of the air in the care of Mr. Merriam.

At the outbreak of War 1914 he joined the R.N.A.S. and trained hundreds of pilots, first of all at Chingford and later at the R.A.F. Aerodrome at Vendôme in France. There have been few instructors as competent as Mr. Merriam and none who showed greater skill and patience in coaxing obtuse youths into the handling of early war-time aircraft. Consequently he has always been regarded as one of the most painstaking and careful of instructors.

His long experience of aviation and the vast number of different types of aeroplanes which he has flown have given him an intimate knowledge of the care and maintenance of aircraft and engines, and one feels sure that anybody who consults him on any practical problem will receive sound advice.

PERSONAL NOTICES.

DEATHS.

KEMPTHORNE.—On Aug. 23, at Worthy Down, Winchester, as the result of a flying accident, Hugh James Fitzgerald Kempthorne, Plt. Off., R.A.F.

Mr. Kempthorne joined the R.A.F. with a short service commission in July, 1925, and was posted to No. 2 F.T.S., Digby, for a course of flying instruction. He was appointed to No. 58 (Bombing) Squadron, in June, 1926.

McLERIE.—On Aug. 4, at Kenora, Ontario, from pneumonia, A. G.



TYPES
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McLerie, General Manager, Fairchild Aerial Surveys Company (of Canada) Ltd.

Mr. A. G. McLerie was born in 1882 at Windsor, Ontario. In 1913 he became Resident Engineer on the Banff-Windermere Road and was later transferred to the Winnipeg Aqueduct and the Transcontinental Railroad Construction in the same capacity.

Mr. McLerie joined the R.F.C. at Borden in 1917 and became a pilot instructor. After the Armistice in 1918 he operated a trial air-mail route between Toronto and Borden for six months. He then returned to the Canadian Air Force at Borden and remained with them until 1923, when he joined Fairchild Aerial Surveys Ltd. as manager of the mapping division. In the Spring of 1926 he was appointed General Manager of the Company.

A friend writes:—"Commercial Aviation in Canada has lost one of its earliest pioneers and a staunch supporter, while we who worked with him have lost one of our best friends. Always cheery, always ready to shoulder the other fellow's troubles, Mac's death came as a terrific blow to those of us that had the pleasure of knowing him."

MELLIANEY.—On Aug. 24, after a severe operation, Thomas Graham Mellanby, late Capt., R.A.F., of Harlburn, Stockton-on-Tees.

Mrs. H. R. Junor, Gueira, Ash Vale, wishes to thank all friends for kind expressions of sympathy and floral tributes in her recent sad bereavement.

Mr. and Mrs. W. G. Tarrant and family, Lake House, Byfleet, wish to thank all friends for the many kind expressions of sympathy and floral tributes in their recent sad bereavement.

FORTHCOMING MARRIAGE.

JONES—MARSLAND.—The engagement is announced of Mr. Lewis Francis Jones, late R.F.C. and R.A.F., only son of the Rev. Lewis and Mrs. Jones, of Wold Newton Vicarage, Hunmanby, Yorkshire, and Miss Colleen Ruth Marsland, youngest daughter of Mr. and Mrs. Ellis Marsland, of The Court House, Painswick, Gloucestershire.

PORTAL—ANDERSON.—The marriage arranged between Lieut.-Com. Reginald Portal, D.S.C., R.N., son of Mr. and Mrs. E. R. Portal, of Eddington House, Hungerford, and Helen, eldest daughter of Mr. and Mrs. Frederick Anderson, of Standen Manor, Hungerford, will take place on September 16.

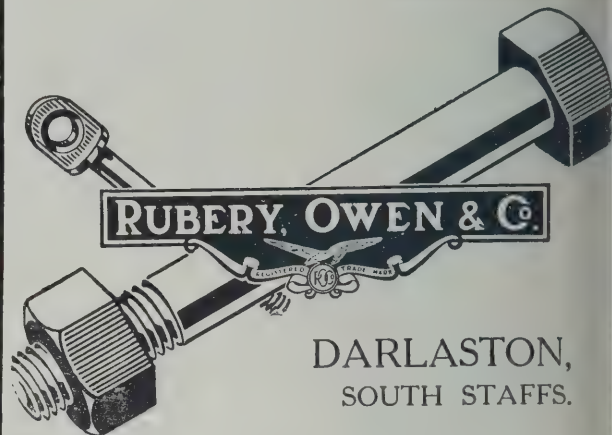
BIRTHS.

BULLOCK.—On Aug. 27, at 16, Gilston Road, The Boltons, South Kensington, to Barbara, the wife of Maj. C. L. Bullock—a son.

EVILL.—On Aug. 25, at 30, Curzon Street, W.1, to Wing Cdr. and Mrs. Strathern Evill—a son.

ROBERTS.—On Aug. 20, at Wellingtonia, Rushden, Northants, to Dorothy, the wife of Plt. Off. C. H. Roberts, R.A.F. (late Arg. and Suthtd. Highlanders)—a daughter.

WILKINS.—On July 25, at Prebend Mansions, Chiswick, to Edith (ex-W.R.A.F.), wife of Frank Stafford Wilkins (R.A.F.)—a daughter.



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THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. G. G. G.

Vol. XXXI. No. 10.

SIXPENCE WEEKLY.

[Registered at the G.P.O. as a Newspaper.]

"OUR OWN FELICITY WE MAKE OR FIND."—(Dr. Johnson.)



THE PRIVATE OWNER'S OUTING:—Here is seen the Blackburn Bluebird with the three-cylinder Blackburn engine, flying in 1924. The same machine will be seen at Lypne with an Armstrong-Siddeley Genet of 60 H.P. It represents one of several types of small aeroplanes suitable for the independent aviator.



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In low visibility the Marconi Direction Finder—installed on aircraft or at Ground Stations—is a valuable aid to navigation and makes for safety of flight.

Sir Samuel Hoare, the Air Minister, in an address at the Royal Aero Club said wireless was now of tremendous help to pilots working in weather which a few years ago would have been regarded as impossible for flying.

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ON THE LYPNE COMPETITIONS.

On Friday next, Sept. 10 (D.V. and W.P.) there will begin at Lympne near Folkestone a series of competitions for prizes amounting to £5,000 provided by the Proprietors of *The Daily Mail*.

The flying will be of some technical interest, although the majority of the aeroplanes are over two years old, because it will give some sort of indication of the reliability of small aero-engines as compared with the big aero-engines used by the Air Force and in Civil Aviation. Also it will be of quite considerable sporting interest because a number of very good pilots will be flying the machines, and so each machine and engine will have the best possible opportunity of showing its true form in the course of some 2,000 miles of flying.

After the Competition, the conditions of which will be explained hereafter, the survivors, if any, may compete on Saturday, Sept. 18, in a 75-mile handicap race for a prize of 200 guineas provided by the Society of Motor Manufacturers and Traders.

On the same afternoon there will be an open handicap race for a £50 prize for all types of aircraft, right down the alphabet, from Argosies to Wrens. Presumably it will provide the usual review of ancestors such as resuscitated Martinsydes and Mr. Dudley Watt's Sopwith Swallow and other ancient aircraft which still fly faster than modern Service single-seaters. Also it will bring out sundry Moths and D.H.s of sorts which are too big for the so-called "Light" aeroplane class.

And the performance will end with the usual Handicap Race for the Grosvenor Challenge Cup presented by the Lord Edward Grosvenor. In this the aeroplane and engine must be entirely of British manufacture, and the weight of the engine must not exceed 275 lbs. Which means that it is really a race for aeroplanes up to and including the all-pervading Moth.

THE ORIGIN OF THE COMPETITION.

This year's Lympne Competition really originated at the end of the Government Competition for alleged light aeroplanes in 1924. Those who are responsible for the conduct of *The Daily Mail* were seized with one of their sporadic outbreaks of aviaticitis, which usually takes the form of a wild and generally not particularly reasoned passion for one particular type of aircraft or phase of aviation. As for example when after the Circuit of Britain in 1911 the late Lord Northcliffe boldly announced that the result marked the doom of the biplane and the mastery of the bird-like monoplane.

The Daily Mail has at one time or other given away thousands of pounds in prizes for flying. And always the conditions for winning have been schemed to work up the maximum public enthusiasm for the shortest possible time, coupled, naturally, with the best possible advertisement for *The Daily Mail*. In 1924 the momentary enthusiasm aroused by the Light Aeroplane Competition moved *The Daily Mail* to offer this £5,000 prize for "motor-gliders"—as it had been pleased to call them after that amusing show at Ifford in 1922, happily ignoring the fact that a glider is essentially an aeroplane without an engine.

Having very sensibly consulted somebody or other who knew something about aviation *The Daily Mail* offered its prize for a competition in which the engine employed must be below a certain weight. And that weight was fixed at 170 lbs.

Presumably the idea was, that anybody who really tried to make an aero-engine ought to be able to get it down to something below 3 lbs. per horse-power, and so an engine of 170 lbs. ought to give a good 60 h.p. which ought to be enough to carry two people safely at quite a reasonable speed. And of course this offered a splendid opportunity for some competent engine designer with original ideas to get an engine down to 2 lbs. per h.p., which would give the aeroplane 85 h.p. That would be ample for two people in any aeroplane constructed according to really modern ideas.

But when it came to the point the aeroplane makers discovered that nowhere in the World was there an engine weighing only 170 lbs. which would give them enough power to put up anything like a performance with a two-seater aeroplane. Consequently they besought *The Daily Mail*, pre-

sumably by way of the Royal Aero Club, to postpone the competition till 1926, in the hopes that the aero-engine makers would think it worth their while to produce something radically new in engines. A new type engine could not be produced and tested in twelve months. And that was why there was no competition for so-called light aeroplanes last year, 1925.

THAT ENGINE TROUBLE.

The sad thing is that in spite of being deliberately given a full two years in which to produce a suitable engine for the job, only one firm, Armstrong-Siddeley Motors Ltd., has thought it worth while to produce a completely new engine (the Genet) for light aeroplanes—or at any rate an engine which comes within the limit of 170 lbs. and yet gives all the power needed for a touring two-seater. Even as it is, although quite a large amount of hard work and hard thought has been put into the Genet it has only just been produced in time for a limited number of aeroplane makers to fit it into their competition machines. And it has only just been got inside the weight-limit, by fitting it with a single magneto, like most of the other engines for small aeroplanes.

This is a pity, because, despite all our experience of aircraft and motor-cars, magnetos are still not absolutely reliable, and all British passenger-carrying machines for public service have to be fitted with two magnetos.

A magneto is a thing which is quite quickly and quite easily changed. So it would be a great pity if any of the machines at Lympne were put out of the Competition through the failure of their single magnetos, when for the extra few pounds weight of a second magneto they could quite easily be made almost proof against a forced landing through magneto failure.

The Cirrus engine is barred from the competition because even the Mark II Cirrus is about 100 lbs. over the limiting weight. Consequently the only engines available for the competition besides the Genet are the three-cylinder Burney and Blackburne Thrush, which is a development from the firm's engine of 1924, the two-cylinder Bristol Cherub Mark III, which is a development of the original Cherub, and the two-cylinder A.B.C. Scorpion, which is a development of the various types of two-cylinder A.B.C. engines.

No doubt if a few other engine makers had thought it worth while to produce new engines for this competition quite a number of aircraft firms would have thought it worth their while to build new aeroplanes round them. But apparently these very small engines are not in the line of business of the great manufacturers of water-cooled engines. And evidently none of the manufacturers of motor-cycle engines, who might be supposed to know more about small high-speed air-cooled engines than anybody else, thought it worth their while to take a chance of capturing an entirely new market.

So the Competition resolves itself into a trial of strength between four well-known makes of engines. It is really hardly an aeroplane competition at all.

THE OBJECT TO BE ATTAINED.

Personally one believes that no matter how good the existing engines may prove themselves to be there is still a very good market open to some enterprising motor manufacturer who will produce an air-cooled engine giving a steady 80 h.p. for a weight of something like 200 lbs. at a price of about £150. Mr. Pobjoy of the Cranwell Light Aeroplane Club and his associates made a very sporting effort to produce an engine in somewhere about that class, though the question of price did not immediately arise, but unfortunately it could not be built and tried out in time to pass its Air Ministry type-tests. But one is certain that such an engine can be produced.

When it is produced it will make all the difference to the sale of small aeroplanes. A two-seater of somewhere about the capacity of a Moth could then be built to sell in the region of £400. And for such a machine there would be an enormous market.

The question to be decided is, will some manufacturer or other produce a cheap aeroplane and engine and so create the market, or must we wait till the demand produces the cheap aircraft. In other words, did Ford produce the demand

for cheap cars or did the demand for cheap cars produce the Ford? Which is to ask: Did the first egg produce the first hen or did the first hen produce the first egg? The answer to the question is that the time produces the man and that when the psychological momentum is sufficient somebody will arise to give us the cheap aircraft.

A MATTER OF ADVERTISEMENT.

In the meantime this competition is a praiseworthy attempt to increase the said psychological momentum, and one hopes that the few aeroplanes which have been produced for it will provide *The Daily Mail* with enough material day by day for a whole week to enable it to work up something like popular interest in the subject. *The Mail* must somehow get advertising value for the money it is spending in the form of prizes, so naturally it will work up all the interest that it can in the competition throughout the week. Consequently every firm whose machine or engine is at Lympne is bound to get quite a handsome advertisement in return for the money spent in competing.

It certainly is a pity that the whole British Aircraft Industry should only be able to produce two new aeroplanes for a competition in which the prizes amount to £5,000, not to mention

all the publicity to be got in *The Daily Mail* and its allied papers. Merely competing and putting up a decent show would get £1,000 worth of advertising to any firm, if its machine were of a saleable type at a saleable price. And winning *The Daily Mail* prizes would get publicity that could not be bought with money equal to the amount of the prizes. In fact one may say quite fairly that the winner of the first prize will not get merely the £3,000 but will get at least another £3,000 worth of advertising.

Naturally it is true that the competition rules are likely to produce a useless type of aeroplane. But no matter what rules are made for any kind of competition somebody will always design a freak to beat the rules.

The same thing has always happened in cycle racing and motor-cycle racing and car racing and yacht racing and motor-boat racing and even in horse racing. But the freaks generally breed an improved type. We should not have the highly-efficient cars of to-day if we had not had the racing freaks of yesterday, and English horses would not be the best in the World if there had been no horse racing in the past two hundred years. And so the Competition may be quite useful after all.—C. G. G.

MR. COBHAM'S RETURN.

Mr. Alan Cobham, who, with Sjt. Ward and Mr. Capel is flying from Melbourne to London on a De Havilland 50J (Armstrong-Siddeley Jaguar), flew from Oodnadatta to Alice Springs on Aug. 31.

On Sept. 1 he flew via Newcastle Waters to Katherine (Northern Territory).

On Sept. 2 he flew to Port Darwin, thus crossing Australia in 3½ days.

Here the floats, built by Short Bros., were refitted to the machine.

On Sept. 4 he flew to Kupang.

On Sept. 5 he flew to Sourabaya.

On Sept. 6 he flew via Batavia to Muntok.

On Sept. 7 he flew to Singapore.

With this rate of progress Mr. Cobham should reach this country about Sept. 20 or 21.

FOREIGN SALES AND PURCHASES.

The Norwegian military authorities have bought five Fokker aircraft (fitted with Napier Lion engines), and it is stated that the Military Aircraft Factory at Kjeller has acquired a licence to manufacture Fokker aircraft in Norway.

It is reported that the Greek Government have drawn up an agreement with the Aktiebolag Flygindustri, Malmö, Sweden, for the purchase of a number of Swedish-built Junkers three-engined monoplanes to be used by the Ikarus air traffic company, which is subsidised by the Greek Government.

Switzerland has purchased a number of Fiat A.25 engines and several Fiat B.R.1 bombing aeroplanes. They have also bought a number of Dewoitine D.1 single-seat fighter monoplanes.

The Soviet Government has placed an order with the State Airship Factory in Rome for a semi-rigid airship on the "Norge" type to have a cubic capacity of 53,000 cubic metres and to be fitted with six engines.

The Udet Flugzeugbau has built one and is building a further three, Udet Condor monoplanes (four 100 h.p. Siemens engines) for the Deutsche Lufthansa A.G. Owing to the limited space in their old factory at Munich-Ramersdorf they have moved into the former Rumpler factory at Augsburg. Orders so far obtained not only in Germany, but from Austria, Hungary, Mexico, etc., provide a whole year's work for the new factory.

Bulgaria has purchased a series of Smolik S.18 training biplanes (60 h.p. Walter engines) from the Vojenska Tovarna na Letadla of Prague, Czecho-Slovakia.

This company has also sold a number of S.20 single-seat fighters and S.21 single-seat advanced training biplanes fitted with the 300 h.p. and the 180 h.p. Hispano-Suiza engines respectively to the Lithuanian Government.

Poland has purchased a number of Farman Goliath bombers fitted with two 420 h.p. Gnôme-Rhône Jupiter engines each, and M. Pitot of the Farman Company is at present in Warsaw giving preliminary instruction on this type of machine.

MM. Coste and Lintilhac, of the Breguet Company, are in Greece and Turkey respectively delivering Breguet XIX biplanes.

M. Charpentier, also of the Breguet Company, is proceeding to Bolivia to demonstrate the Breguet XIX before the Bolivian Government.

El Salvador has purchased a series of Hanriot H.320 training biplanes (120 h.p. Salmson engines).

The Persian Government has ordered six aircraft from Russia. Although they will be of essentially German design and built up of German parts, they will be erected in Russia.

A BERLIN AIR MEETING.

Between 100,000 and 200,000 went to the Tempelhofer aerodrome, Berlin, on Sunday, to watch an aviation display. Everything went off with real German thoroughness under real German organisation. Apparently it was organised by the German Aero Club, which means Major von Tschudi.

There were no races at the meeting, but there was plenty of exhibition and formation flying. There was a commercial group of five Junkers monoplanes led by Major Keller, and a group of training biplanes led by Herr von Manteuffel, and a group of six Junkers training biplanes led by Herr Steindorf.

After that came an aerial duel between Herren Udet and Bäumer. Also there was some aerobatic flying by Fraulein Thea Rasche.

At the end of the day there were fireworks and night flying, and one gathers that those who paid for admission had their full money's worth.

The names of Udet, Bäumer and Manteuffel are familiar to war-time aviators as star-turn fighting pilots, and one is glad to see that they retain their old skill and keenness. They must certainly act as examples to the younger generation of German aviators, who, though they are only permitted to train as civilians, can attain the ability of the great war-pilots in the handling of their machines by studying their manoeuvres in the air. The use of aeroplane armament can be acquired quite quickly when once a man knows how to fly.

Mr. Frank Courtney on the Auto-giro was one of the attractions of the meeting and the German Military and Naval authorities were much impressed with the machine.

The new two-seater was used, which has a much better performance than the previous two. The balancing ailerons have been removed altogether. These had but little controlling effect and when the machine was dropping vertically they stalled in their own small way and tended to go into a spin which caused the machine to land left wing down. The take-off, climb, and general performance of the two-seater is vastly better than that of the single-seater which was at the R.A.F. Pageant.

A LIGHT AEROPLANE TRIUMPH.

On Aug. 31, Lieut. Jira left Prague at 04.50 hours on an Avia B.H.9 (60 h.p. Walter engine) and flying over Le Bourget aerodrome, Paris, at 11.20 hours, returned to Prague without alighting, reaching Kbely aerodrome at 18.33 hours. The total distance of 1,900 kms. (1,180 miles) was covered in 13 hours 43 mins.

The machine used is of the same type as that used as a two-seater school machine in the Czecho-Slovak Army and is practically the same as the B.H.11 which won the 1925 *Coppa d'Italia* and the 1926 *Concours d'Avions Economiques* at Orly. For this flight the machine carried 250 kgs. of petrol and 19 kgs. of oil, of which 205 kgs. of petrol and 6.8 kgs. of oil were consumed.

The total weight of the machine before starting was 750 kgs. (1,700 lbs.), which gives a wing loading of 53 kgs. per sq. m. (about 12½ lbs. per sq. ft.), and a power loading of 12.5 kgs. (28 lbs.) per h.p. In spite of this the machine got off easily and climbed well.

This flight again demonstrates the all-round efficiency of the Avia aircraft and the Walter engine.

A NEW DISTANCE RECORD.

On Aug. 31 Lieut. Challe and Capt. Weiser left Le Bourget at 06.18 hours on a Breguet XIX biplane (500 h.p. Farman engine) to beat the long distance non-stop record.

On the following day they landed at Bandar Abbas, having covered a distance of 3,250 miles without a stop.

The previous record was made on July 14-15 of this year, when Lieuts. Girier and Dordilly flew from Paris to Omsk, 2,947 miles non-stop, also on a Breguet XIX biplane.

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The Finest Aero Engine in the World

FOLLOWING the successful Service exercise from Cairo to Cape Town and back to England by four Fairey seaplanes fitted with Napier engines, another service flight has been completed for the British Air Ministry by two Supermarine 'Southampton' flying boats, each fitted with two Napier Lion engines.

These two flying boats flew from Plymouth to Alexandria and back, covering in all 27,600 engine miles, without any trouble whatsoever.

As in the case of the Cairo-Cape Town flight, the Napier engines were not specially selected but were taken from Royal Air Force store in the usual way.

For any flights or Service where consistent reliability is essential follow the lead of the British Air Ministry and select Napiers.

In a recent competition held in Germany to discover the best German commercial seaplane, the First Prize was won by a Heinkel machine fitted with Napier Lion engine. Seventeen machines entered this competition—one with Napier engine. Only three finished - NAPIER FIRST.

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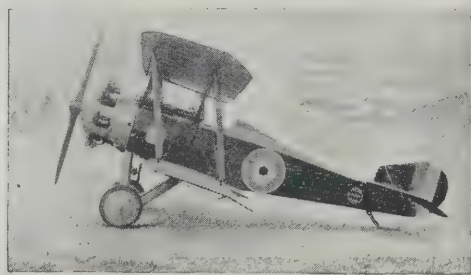
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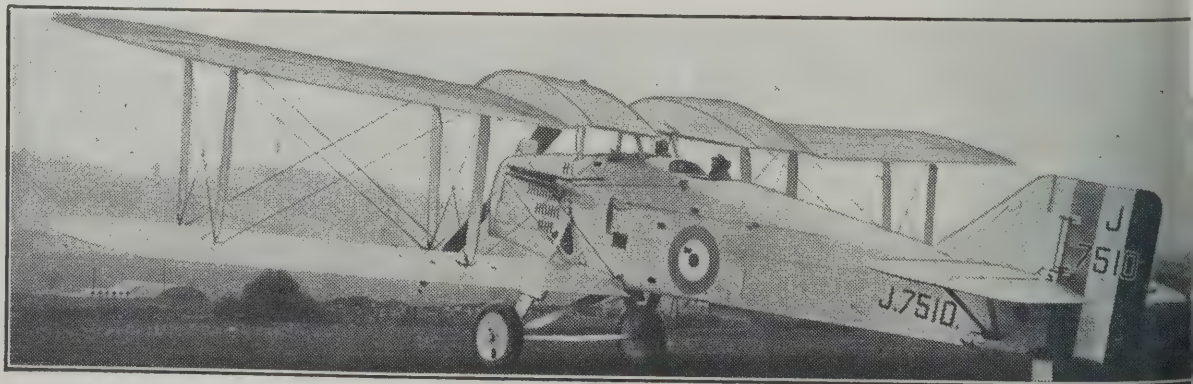
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We are supplying numbers of machines to the Royal Air Force, both at home and abroad. We have our own 4-foot Wind Channel for scientifically testing models of our designs before manufacturing, and our Aerodrome is situated by the side of our Works, for testing the finished machines.



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We are designers and builders of all types of Aeroplanes from the private Single-seater to the large Twin-engined Bombing Machine.

Our latest Military Machines are the Yeovil Day Bomber, which has been supplied to the Royal Air Force, and the Westbury, which is at present on its trials.

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ENGLAND.



Westland Works, Yeovil, Somerset.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

GENERAL DUTIES BRANCH.—The following Plt. Offs. are promoted to the rank of Flg. Off.:—J. G. Franks (June 17); W. A. Cooke (June 25); R. W. Holden (Lt., T.A.R. of O.) (Aug. 13); D. S. Green (Aug. 17).

Plt. Off. on probation W. C. McNeil is confirmed in rank (Aug. 12); Flg. Off. P. H. Hunter is placed on the retired list at his own request (Sept. 1).

The following Flg. Offs. are transferred to the Reserve, Class A:—H. A. Bayne, N. M. French, H. P. L. Gardner, A. E. Golds, R. H. Windsor (Aug. 29); A. M. Glover, E. C. N. Jeffries (Sept. 1). Flg. Off. C. Ayling relinquishes his S.S. comm. on account of ill-health and is permitted to retain his rank (Aug. 30); G. F. N. Bradford, Lt., R.N., Flg. Off., R.A.F., relinquishes his temp. comm. on return to Naval duty (Sept. 1).

ACCOUNTANT BRANCH.—Plt. Off. on probation J. O. Morrison is confirmed in rank and promoted to the rank of Flg. Off. (Aug. 10).

MEDICAL BRANCH.—Medical Quartermaster and Flg. Off. C. B. Willsher is placed on the retired list on account of ill-health (Sept. 1).

MEMORANDUM.—The permission granted to Sec. Lt. J. F. R. Greeff to retain rank is withdrawn on enlistment in the R.A.F.

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. in Class A.A., General Duties Branch, as Plt. Offs. on probation:—A. G. Store (Aug. 9); H. J. Phillips (Aug. 16); A. B. Roche (Aug. 16); S. O. Tudor (Aug. 17).

The following Flg. Offs. relinquish their comms. on completion of service:—W. A. Warwick (May 29); J. Baird (Aug. 28); L. W. Allen (Sept. 1). Flg. Off. A. B. Roche resigns his comm. in Class B on appointment to a comm. in Class A.A. (Aug. 16).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Miss E. R. James resigns her appointment as Sister (Aug. 12).

Appointments.

Week ending Sept. 6.
Group Captains P. L. W. Herbert, C.M.G., C.B.E., to Fighting Area H.Q., Uxbridge, for Air Staff Duties, 25/8. A. G. Board, C.M.G., D.S.O., to No. 21 Group H.Q., West Drayton, 20/8, to command with effect from 25/8.

Wing Commanders E. W. Norton, D.S.C., to R.A.F. Depot, Uxbridge, pending commencement of Staff Course at R.N. College, Greenwich, on transfer to Home Estab., 20/8. C. G. H. Cooke, D.S.C., A.F.C., to R.A.F. Base, Malta, pending taking over command, 20/8. C. W. H. Pulford, O.B.E., A.F.C., to H.M.S. *Furlous* pending posting as Senior Air Force Officer, 1/9.

Squadron Leaders L. C. Keeble, to R.A.F. Base, Gosport, 24/8. R. S. Booth, A.F.C., to Royal Airship Works, Cardington, 13/9. F. R. Alford, M.C., to No. 6 Arm. Car Coy., Iraq, 10/8. G. H. Hall, A.F.C., to Record Office, Ruislip, 6/9. L. H. Slatter, O.B.E., D.S.C., D.F.C., to M.A.E.E., Felixstowe, 6/9.

Flight Lieutenants W. G. Meggitt, M.C., to C.F.S., Upavon, 16/8. N. V. Wrigley, to Aircraft Depot, Iraq, 9/8. A. H. Goldie, to No. 216 Sqdn., Egypt, 11/8. S. S. Benson, A.F.C., to H.Q., Iraq, 13/8. E. C. Emmett, M.C., D.F.C., to Arm. and Gunnery School, Eastchurch, 14/8. E. J. D. Routh, to Superintendent of Reserves, Northolt, 5/9. C. A. Horn, to Station H.Q., Andover, 24/8.

Flying Officers C. S. Whellock, to School of Store Accounting and Storekeeping, Kidbrooke, on transfer to Home Estab., 16/8. L. Young, to Home Aircraft Depot, Henlow, on transfer to Home Estab., 18/8. B. H. Shaw, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 13/8. H. L. Drake, to Aircraft Depot, India, 21/7. H. Walker, to R.A.F. Depot, Uxbridge (Non-effective Pool), on transfer to Home Estab., 16/8. F. H. H. Twelvtree, to R.A.F. Base, Calshot, 8/9. L. W. Lane, to No. 16 Sqdn., Old Sarum, 13/9. W. J. Brown, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/8. V. F. Whitting, D.S.M., to R.A.F. Base, Gosport, 6/8. B. S. Brice, A.F.C., and H. T. Satterford, to Home Aircraft Depot, Henlow, 1/9. T. J. Desmond, to Reception Depot, West Drayton, 6/9.

Pilot Officers J. M. Hunter and G. L. C. Richardson, to No. 2 F.T.S., Digby, 13/9. W. F. Bryanton, to No. 30 Sqdn., Iraq, 16/7. J. A. E. Inkster, to No. 30 Sqdn., Iraq, 27/7. L. B. McGovern, to R.A.F. Depot, Uxbridge (Non-effective Pool), on transfer to Home Estab., 16/8. E. C. I. Richardson, to No. 70 Sqdn., Iraq, 27/7.

MEDICAL BRANCH.—Group Captain A. W. Iredell, to H.Q., Inland Area. Stanmore, for duty as P.M.O., 6/9.

Wing Commander W. Tyrrell, D.S.O., M.C., M.B., D.P.H., to H.Q., Halton, 2/9, for duty as P.M.O., 6/9.

Flight Lieutenant A. E. Jenkins, to Station H.Q., Duxford, 28/8. Flight Lieutenant (Dental) H. J. Procter, to No. 5 F.T.S., Sealand, 19/8. Flight Lieutenant (Q.M. Medical) H. Steele, to R.A.F. Officers' Hospital, Uxbridge, 12/9.

Flying Officer (Q.M. Medical) D. Breen, to R.A.F. Hospital, Halton, on appointment to a Perm. Comm., 1/9. Flying Officers C. W. Coffey and J. Hutchieson, M.B., to Research Laboratory and M.O.S. of I., on appointment to S.S. Comms., 24/8.

STORES BRANCH.—Flying Officers W. Liniker, to Station H.Q., Andover, 2/9. L. L. Bray, to No. 17 Sqdn., Hawkinge, 25/8.

ACCOUNTANT BRANCH.—Flying Officer D. J. Sherlock, to Aircraft Depot, Iraq, 13/8.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Marchwood, Hampshire, to a Bristol Fighter of No. 16 Squadron, Old Sarum, Salisbury, on Aug. 31, Plt. Off. Alfred Lionel René Page, the pilot of the aircraft, was killed, and No. 328941 L-AC. Eric Arthur Lister Lowe was dangerously injured.

L-AC. Eric Arthur Lister Lowe died in the Royal Victoria Hospital, Netley, on Sept. 1. [According to *The Times* Mr. Page and L-AC. Lowe were engaged on a signal scheme with the 9th Brigade Signals on Army Manœuvres, at the time of the accident.]

The Air Ministry regrets to announce that as the result of an accident at Hinaidi, Iraq, to a D.H.9a of No. 55 Squadron Hinaidi, on Sept. 1, Flg. Off. William Osmond du Port, the pilot of the aircraft, was killed and No. 335313 L-AC William Arthur Pearce was severely injured.

L-AC. Pearce died of his injuries on Sept. 2.

The Removal of the Central Flying School.

The Central Flying School, R.A.F., is being moved from Upavon, Wiltshire, to Wittering, near Stamford, Lincolnshire.

The Central Flying School was opened at Upavon on Salisbury Plain, on June 19, 1912, as a joint Naval and Military flying school. The first commandant was Captain Godfrey Paine, R.N., who retired from the R.A.F. as Air Vice-Marshal Sir Godfrey Paine, K.C.B., M.V.O., on May 12, 1920.

The first course at the C.F.S. began in August, 1912, and nineteen pupils passed out by the end of December, in spite of the fact that there were only four machines available for instruction.

Sir Walter Raleigh, in "The War in the Air," says:

During the next year and a-half, up to the very eve of the war the work of the School went on steadily with improving material and increasing efficiency. . . . On an average about 30 officers passed out from the School, into one branch or another of the Service, at the end of each course. . . . The steady flow of recruits from Upavon soon enabled the Military Wing of the Royal Flying Corps to form new Squadrons.

On Oct. 1, 1912, Major H. M. Trenchard, Royal Scots Fusiliers, was appointed instructor on the staff of the C.F.S. He continued this work until Sept. 23, 1913, when he was appointed Assistant Commandant, a post which he held until the outbreak of War.

After the outbreak of the War 1914-18 the C.F.S. became a purely Military Flying School, and when the demands of the Service required a larger output of pilots and new flying schools and training squadrons were formed, the C.F.S. carried out only the advanced training required to replace casualties abroad.

For a short period in 1920 the Unit was known as the Flying Instructors' School, but it regained its original name a few months later.

All the pre-War members of the R.A.F. will regret deeply that this last link with the traditions of the beginning of Service Aviation should be broken. There seems no good reason why the C.F.S.—where instructors are taught how to instruct—should not have been allowed to remain in the birthplace of the united Naval and Military Wings of the Royal Flying Corps. Salisbury Plain is surely sufficiently central.

C. G. G.

A Sky Lark.

A tour of towns on the south and east coasts of England by a Flight of the R.A.F. equipped with Supermarine Southampton flying-boats (two Napier Lion engines) has been arranged by the Air Ministry. The Flight will be commanded by Sq. Ldr. A. Durston, A.F.C., O.C. No. 480 (Coastal Reconnaissance) Flight, R.A.F.

The Flight will reach each port of call shortly after 09.0 hours and will anchor at convenient moorings, when, in the words of the communiqué,—

Although the number of visitors who can be allowed on board must necessarily be limited, arrangements have been made so that visitors to the resorts and local residents can inspect the aircraft at anchor from small boats.

[One would remind the Air Ministry that the American World Flight machines were very nearly wrecked as the result of a massed attack of inquisitive natives in sampans. One trusts that an extra ration of fenders and boat-hooks will be issued to the Southamptons as a measure of self-defence. Ed.]

The programme of the cruise is as follows:—Sept. 6, Crome and Yarmouth. Sept. 7, Lowestoft and Felixstowe. Sept. 8, Southend and Clacton. Sept. 9, Margate, Broadstairs and Ramsgate. Sept. 13, Sandown, Shanklin and Ventnor (two machines only). Sept. 14, Bournemouth and Weymouth. Sept. 15, Worthing and Brighton. Sept. 16, Hastings and Eastbourne (two machines only). Sept. 21, Torquay.

[The Air Ministry has omitted to notify the fact that the Public are requested not to feed the crews.—Ed.]

The R.A.F. Flight arrived at Crome on Sept. 6, and anchored off the pier head. The Secretary of State for Air paid a visit of inspection to the machines and later presided at a luncheon in connection with the visit.

In the course of a speech at the luncheon Sir Samuel Hoare said that the visit to Crome was part of a general training scheme; it was much more than a visit to seaside resorts. He was inclined to think that people in years to come would look back upon the flights now being carried out as an incident of interest, as a beginning of a part of the scheme to make the Empire defences much more mobile than they had been in the past.

After lunch the Air Minister, accompanied by Commander Locker-Jamson, flew to Yarmouth in one of the boats.

The Flight arrived at Great Yarmouth in the afternoon of Sept. 6, and left for Felixstowe at 17.15 hours for the night.



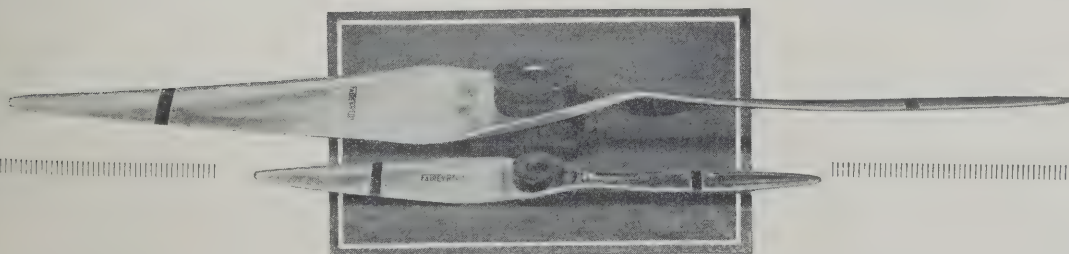
THE
LIGHT AEROPLANE COMPETITION
AT
LYMPNE

10th - 18th September, 1926.

The large percentage of aircraft entered for the Lympne Light Aeroplane Competition fitted with FAIREY-REED Airscrews demonstrates the confidence placed in the reliability and efficiency of these airscrews.

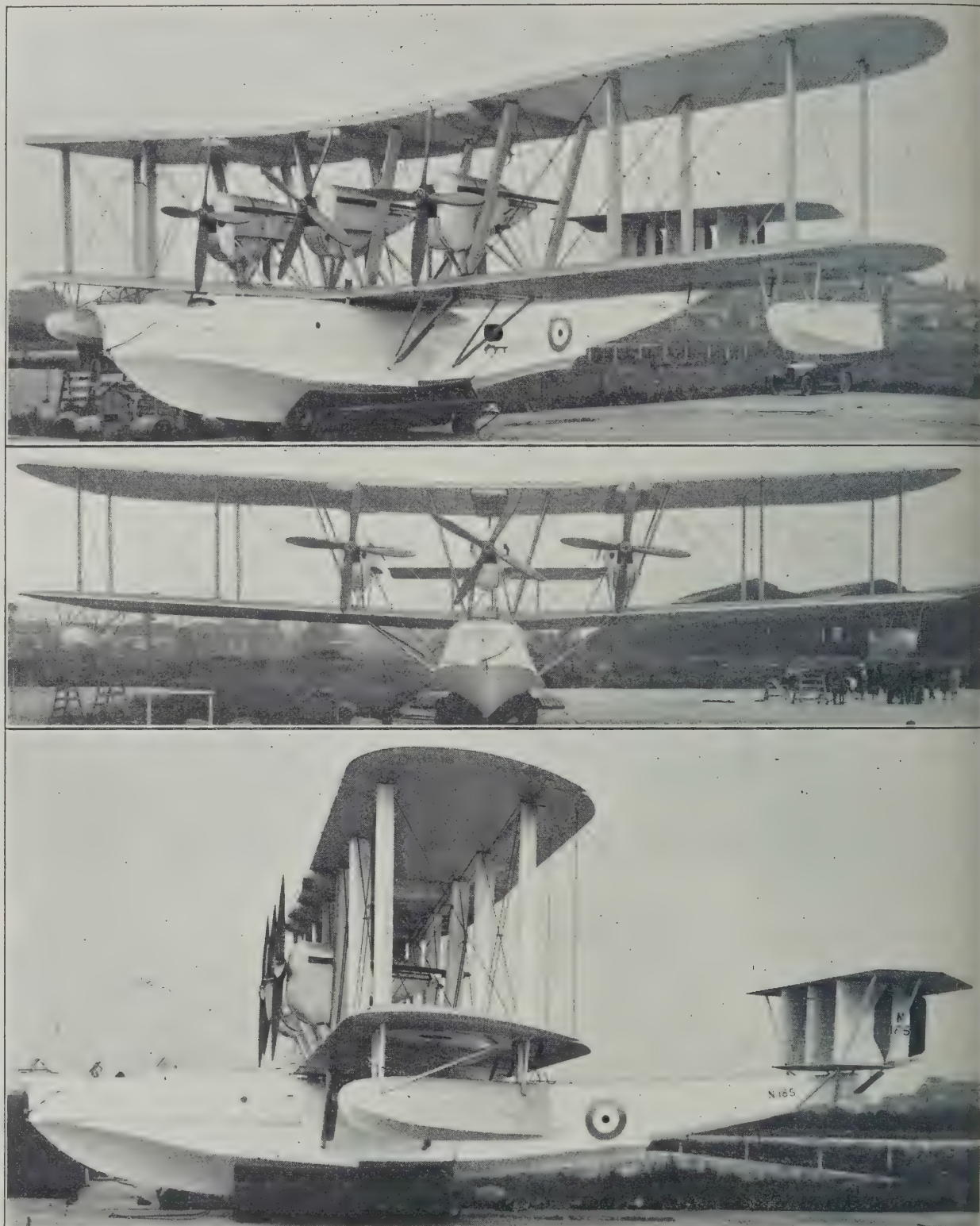
FAIREY-REED
ALL-METAL AIRSCREW

Many recent achievements, where reliability and efficiency were absolutely essential, have been accomplished with aircraft fitted with Reed airscrews, a few instances being: Commander Byrd's flight to the North Pole; Lieut. Medaet's flight of 11,400 miles from Brussels to the Congo and back; the world's speed record of 278 miles per hour; the winning of the 1926 King's Cup Air Race by Capt. Broad.



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

FOR IMPERIAL DEFENCE.



THE OTHER EXTREME.—This week's issue being full of small aeroplane it seems well to illustrate our latest and biggest flying-boat. The Blackburn Iris is a three-engined boat fitted with Rolls-Royce Condor III engines, giving approximately 700 h.p. each. She was designed by Major J. D. Rennie for long range reconnaissance work with the Fleet, for submarine patrols and the escorting of merchant ships through submarine zones. She carries a crew of five, 1st pilot, 2nd pilot who acts as navigator, W/T operator and two engineer-gunners.

In the general design particular attention has been given to features which experience has shown to be necessary when operations have to be maintained under adverse conditions of sea and weather. Though performance figures may not be given, it may be said that the result of her performance trials show that all that was expected and a bit more has been obtained. In her own class she is probably the fastest flying-boat in existence.

Her designer, Major Rennie, was associated with the late Colonel John Porte in all the experimental development work at Felixstowe which produced the big "F" type boats and culminated in the Felixstowe Fury, a boat which was highly successful, though she came to a bad end.

The Blackburn Aeroplane and Motor Co. Ltd., of Brough and Leeds, deserve to be congratulated on the immediate success of this, their first effort to produce a big flying-boat. As our trade routes throughout the Empire must depend in any future war on long-distance air patrols over the sea, the Iris is a valuable contribution to our safety.



Contractors to the BRITISH AIR MINISTRY and most FOREIGN GOVERNMENTS.
Designers and Constructors of "MARTINSYDE" Types of Aircraft.
Designers and Constructors of "CIRRUS" Aero Engines.
120/140 h.p. "AIRDISCO" Aero Engines.
300/330 h.p. "NIMBUS" Aero Engines.



A.D.C. SUCCESSES.

At Bournemouth Air Race Meeting, August 21st and 22nd, A.D.C. "CIRRUS" and "NIMBUS" Aero Engines obtained 9 WINS out of 10 EVENTS.

OTHER RECENT SUCCESSES ARE:—

1st KING'S CUP AIR RACE, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Capt. H. S. Broad.

1st AUSTRALIAN AIR DERBY, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Alan J. Cobham.

A.D.C. "CIRRUS" engines have been supplied to
THE BRITISH AIR MINISTRY,
THE SIX ENGLISH LIGHT AEROPLANE CLUBS,
THE AUSTRALIAN AIR FORCE,
THE IRISH FREE STATE AERO CLUBS,
THE AUSTRALIAN AERO CLUBS,
(tc., etc.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE LYPNE COMPETITIONS.

THE RULES.

So that every reader of THE AEROPLANE may know all about the competitions as they progress it seems worth while to publish the actual Regulations of the Competition and such Supplementary Regulations as have been published up to the time of going to press.

There being still three days between this press day and the beginning of the Competition there is plenty of time for the Royal Aero Club to issue new regulations as numerous as those which have been already issued.

When the regulations in their most elementary form were issued is wrapt in the mists of antiquity. But Supplementary Regulations No. 1 were issued as far back as April 20. As these are the printed regulations on which the competing firms and pilots and all that appertain to them have been basing their scheme of operations they deserve to be reproduced in full.

The regulations are printed in ordinary type for ease of reference and comments have been added, where necessary, in smaller type.

1. Organisation.—The Competition will be conducted by the Royal Aero Club, under the Competition Rules of the Royal Aero Club.

This is really the most important regulation of the lot because the competition rules of the Royal Aero Club mean anything that the Committee of the Royal Aero Club likes to make them for the time being, before, during or after the competition.

2. Light Aeroplane.—The Competition is open to any aeroplane, the weight of the engine of which does not exceed 170 lbs.

NOTE:—The weight of the engine includes Carburettor and Induction System, complete Ignition Equipment, Air Screw Hub and Fastenings, Exhaust Pipes (if any) and Radiator, Pipes and Water (if any).

A nice point which ought to be settled before the start of the Competition arises in connection with this rule. May competitors carry spare parts as ballast and replace them out in the country in case of a forced landing? For example, if an engine has only one magneto, can the machine carry a spare magneto and if the magneto on the engine fails can it be replaced by the spare one and can the dud magneto be put back into the ballast-box to keep the weight right? Similarly, can spare carburettors, sparking plugs, and other parts which may possibly go wrong, be carried as ballast?

3. Two-seater Dual Control.—The Aeroplane must be a two-seater fitted with dual control, and an air speed indicator must be visible from either seat. The heads of the pilot and passenger must not be enclosed. The seating and control must be capable of accommodating a normal person of 6 feet height.

A cockpit width of not less than 24 inches to be measured at the seat level must be provided for both pilot and passenger.

In the case of a side-by-side machine the cockpit width must not be less than 44 inches, to be measured at the seat level.

In the case of a machine with staggered seats, a width of not less than 24 inches must be provided for both pilot and passenger, to be measured at the seat level.

The top of the control column should be free to move in a fore and aft direction through a distance of not less than

15 inches. The distance between the seats of the pilot and passenger must not exceed 5 feet.

Just why the framers of the regulations should insist that the heads of the pilot and passenger must not be enclosed is hard to understand. A good many people do prefer machines with open cockpits, but some people prefer closed cabins. And just as many people in these days prefer saloon cars to open cars (saloon cars are practically universal in the United States) the time will certainly come when the great majority of aeroplanes will have closed cabins. There is no doubt that a fuselage which includes a closed cabin gives a very much better streamline shape than one with open cockpits. And efficiency counts for even more in a small aeroplane than it does in a big one.

Also it would be interesting to know how the high authorities arrived at the decision that the top of the control column must move fore and aft through a distance of not less than 15 inches. Surely the distance which it has to move depends entirely on the amount of movement necessary to move the elevator to its limit. And that depends on the gearing between the elevator and the control column, which again depends on the balance and efficiency and effectiveness of the elevator itself.

These two regulations seem to be rather calculated to cramp the ingenuity of designers.

4. British Manufacture.—The Aeroplane, including the engine and ignition system, must have been designed and constructed in the British Empire.

Of course it is a good thing that the machine should be all British. And the regulation was evidently intended to encourage British enterprise. But it is really rather a pity that the competition was not open to all nations, for all our history shows us that we do our best work after some foreign competitor has come over and beaten us. Foreign competition is always good for British trade.

5. Competitors.—Entrants and Pilots must be British Subjects.

Here again a little foreign competition might have been useful.

6. Fuel.—The ingredients of the fuels must be commercially obtainable in bulk in this country.

The fuel used by all engines in the Competition shall be substantially the same as that used in the respective type tests for Certificates of Airworthiness, and shall be within 5 per cent. of the specific gravity of such fuel.

The unit of fuel is a unit of weight.

All refuelling in the Competition must be done at Lymington Aerodrome under the supervision of the Official Measurer.

All fuel weighed into the tank from the start of the Competition will be counted for consumption, and all testing or running-up of the engine must be carried out on this fuel. Fuel taken by the Official Measurer from the tank will be credited.

This regulation has been made to prevent the use of faked fuels. By adulterating standard aviation petrol with other chemicals such as ether, or tetra-ethyl-lead, it is possible to use engines of higher compression without detonation or to get easier starting or more power, and so to obtain an unfair advantage over those who stick to ordinary commercial fuel.

7. Load to be Carried.—The load to be carried, exclusive of fuel and oil, must not be less than 340 lbs., which figure includes the weight of the pilot and passenger (if carried). If there is no passenger the balance of the 340 lbs. must be carried in the spare seat. Additional weight may be carried anywhere in the Aeroplane as useful load provided that the

THE COMPETITORS AT LYPNE.

| No. | MACHINE. | ENGINE. | ENTRANT. | PUTATIVE PILOTS. |
|-----|------------------------|---|--------------------------------------|---|
| 1 | Blackburn Bluebird | Armstrong-Siddeley Genet | Blackburn Aeroplane & Motor Co. Ltd. | Sqdn. Ldr W. H. Longton, D.F.C., A.F.C. |
| 2 | De Havilland Moth | Armstrong-Siddeley Genet | De Havilland Aircraft Co. Ltd. | Hereward de Havilland or H. S. Broad |
| 3 | Bristol Brownie | Bristol Cherub III | Bristol Aeroplane Co. Ltd. | C. F. Uwins |
| 4 | Hawker Cygnet | Bristol Cherub III | R.A.E. Aero Club | { Flt. Lt. J. S. Chick, M.C., A.F.C., or Flg. Off. C. Mackenzie-Richards, or Flt. Lt. J. A. Gray, D.F.C., or Flg. Off. R. L. Ragg |
| 5 | Sirocco | Bristol Cherub III | | |
| 6 | Hawker Cygnet | Bristol Cherub III | T. O. M. Sopwith & F. Sigrist | P. W. S. Bulman |
| 7 | Supermarine Sparrow II | Bristol Cherub III | Supermarine Aviation Works Ltd. | Henri Biard |
| 8 | H.A.C. I | Bristol Cherub III | Halton Aero Club | { Flt. Lt. F. le P. Trench or Flt. Lt. C. G. Halliday |
| 9 | Avro Avian | Armstrong-Siddeley Genet | | |
| 10 | Avro Avis | Blackburne Thrush or A.B.C. Scorpion II | A. V. Roe & Co. Ltd. | { H. J. L. Hinkler Wing Cdr. W. S. Douglas, M.C., D.F.C. |
| 11 | C.L.A. IV | "P" Engine | Cranwell Light Aeroplane Club | { (Machine No. 11 will not compete) Flt. Lt. N. Comper or Flt.-Lt. H. S. P. Walmsley, M.C., D.F.C. |
| 12 | C.L.A. IV | Bristol Cherub III | | |
| 13 | A.N.E.C. Missel-thrush | Blackburne Thrush | H. W. Martin | G. L. P. Henderson |
| 14 | Parnall Pixie III | Bristol Cherub III | George G. Parnall | { F. T. Courtney Flg. Off. G. E. F. Boyes |
| 15 | Short Satellite | A.B.C. Scorpion II | | |
| 16 | Westland Wood-pigeon | A.B.C. Scorpion II | | |
| | | | Seven Aero Club | Flt. Lt. A. P. Ritchie, A.F.C. |

LYMPNE Air Race Meeting 1925.

Every Race was won, and each of the winning certified performances achieved, on standard grades of—

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

total weight of the Aeroplane does not exceed the figure allowed in the Certificate of Airworthiness.

The carrying of a passenger is optional except in the Eliminating Test "B," in which case it is not permitted.

At first sight it looks as if this regulation would permit the entrant of an aeroplane which was badly out of balance to adjust the balance by putting additional load at some point where it would not normally be carried if the aeroplane were properly in balance, and thus an aeroplane which, owing to a mistake in design, would be unsafe, might be made flyable. But apparently the idea in allowing additional weight to be carried "anywhere in the aeroplane as useful load" is so that for touring purposes luggage may be carried elsewhere than in the spare seat without spoiling the balance of the machine.

8. Certificate of Airworthiness.—A Certificate of Airworthiness for the Aeroplane must be obtained and produced to the Royal Aero Club one week before the opening date of the Competition.

This is in the interests of safe flying. And it so happens that all the constructors of competing machines are already under the thumb of the Air Ministry so nobody is inclined to object.

Also it prevents an entrant who might be prepared to take undue risks from winning a prize by entering an aeroplane which, though it might get through the competition with skilful piloting, might be unsafe to fly in the hands of an ordinary pilot.

Of course there are always people who will be prepared to argue that their own judgment of what is airworthy is better than that of the Air Ministry. And probably some of them are right.

9. Air Navigation Regulations.—Competitors must comply with the Air Navigation Regulations in force, subject to any concessions which may be made by the Air Ministry for this Competition.

Apparently the only concession which the Air Ministry has made for this competition is that machines need not carry their full registration lettering. The competition numbers on the machines are regarded as enough for the purpose.

10. Accommodation.—Free accommodation for competing Aeroplanes will be available at Lympne Aerodrome from Tuesday, Sept. 7, 1926.

One would hardly think that it was necessary to include this as an actual regulation for the competition. But when one remembers that the Air Ministry insists on a 5s. landing fee every time a little aeroplane puts its wheels on one of their precious aerodromes, and charges 10s. a night for housing such a machine, one sees that this concession really does mean something. If the Air Ministry wanted to encourage civilian flying without expense to itself it could abolish all landing and garage fees at all its aerodromes.

11. Identification.—Each Aeroplane will be allotted a number, which must be painted in black on a white surface on each side of the fuselage and on the lower surface of each of the lower main planes. This number must be as large as the surface permits. Government Registration Marks are not necessary for this Competition.

This certainly does simplify the matter of identifying the machines. And it is a good scheme to insist on black numbers on a white surface. On some of the civilian machines which now exist the ordinary black lettering cannot be seen at all at any distance.

12. Flying Time.—The Competition will be open each day at 8 a.m. and will close at 8 p.m. Competitors will not be observed or timed after that hour.

The Stewards may prohibit any flying in the Competition if, in their opinion, the weather conditions justify such action.

The Stewards may extend the flying time in the event of any loss of time on account of unfavourable weather.

This regulation ought at any rate to have a salutary effect on the health of the officials at the meeting. Competitors flying very slow machines in order to carry the maximum "useful load" will naturally want to start as early as possible in the morning so as to get all the advantage they can out of the morning calm. Consequently the officials who have to see them off will necessarily adopt the motto "Early to bed and early to rise." One hopes that it will make them wise also.

13. Change of Pilots.—The changing of Pilots is permitted, but any change must be notified beforehand and the weight adjusted.

It is just as well that the change should be notified beforehand. If for example Mr. Broad was replaced by Mr. Scholefield quite a good deal of time might be needed to adjust the weights.

14. Repairs.—The same Aeroplane and Engine must be used throughout the Competition, but repairs and certain replacements as scheduled will be allowed. Schedule of Replacements permitted:—

Engine Parts—Petrol and Oil Filters; Propellers of the same design, construction and dimensions; Sparking Plugs and Ignition Wires; Valves and Springs; Ignition Systems.

Aeroplane Parts—Wheels; Tyres; Tail Skids; Wingtip Skids.

Repairs and Replacements of a minor nature, with the previous consent of the Stewards.

Any Competitor discarding part of or otherwise altering the Aeroplane during the Competition, so that it differs in any way from that which was presented to the Officials in the first place, will be disqualified.

There is plenty of room for argument over this regulation. If valves and springs will not stand up for the total distance of the competition, namely, 1,964 miles, then obviously the engine is not

airworthy. It may be argued that a valve or a spring may break through sheer bad luck and it would be a pity to put the machine out of action for that reason. But it is equally true that cylinders or airscrew bosses may crack through some accidental flaw. So why should they not also be replaced?

And why should the replacement of ignition systems be permitted? Surely if a magneto cannot stand up to 2,000 miles then the engine to which it is fitted is not airworthy.

Similarly, if wheels and tyres and tail skids may be replaced why not rudders and elevators and ailerons? A pilot who is not quite so skilful as some of the others, or even a very skilful pilot trying to do a particularly stunt landing, may break a wheel or a tail skid. Whether in doing so he damages an aileron or an elevator will depend quite as much on luck or on the particular ground on which he does his landing as on his own personal skill or on the design or construction of the machine.

Such damage is particularly likely to occur in the case of a forced landing owing to engine trouble. Presumably in such an event the stewards could give permission to replace an elevator or an aileron without disqualification.

15. Official Notices.—The posting of decisions and instructions on the Official Notice Board on and after Sept. 9, 1926, constitutes an official notification to all competitors, who are responsible for acquainting themselves with such decisions and instructions.

This is a very good regulation if only the officials of the Club will keep their notice board posted up to date. At the same time, seeing that there is only a limited number of competitors, and that those competitors are likely to be pretty busy every moment their machines are on the ground, it might be just as well if the Competitions Committee kept a few orderlies to run round the places where the competitors keep their machines and draw their attention to the issue of every fresh decision or consideration or instruction or regulation.

16. Entries.—The entry fee is £10. This fee, together with the entry form, must be received by the Royal Aero Club not later than June 30, 1926. Late entries will be received up to 12 noon on July 31, 1926. Late entry fee, £30.

The Royal Aero Club, in the interests of safety, reserves the right to refuse any entries and/or prohibit the flight in the Competition of any Competitor if it considers the flight would be dangerous.

WHEN THE FUN BEGINS.

17. Eliminating Tests.—The following Eliminating Tests A, B, C and D must be carried out in this order and must be passed to the satisfaction of the Officials before taking part in the Competition proper.

Aeroplanes must be presented to the Officials, fully erected, for the Eliminating tests at 10 a.m., on Friday, Sept. 10, 1926. Aeroplanes not so presented will be debarred from taking part in the Competition.

The Eliminating Tests will commence at 10 a.m. on Friday, Sept. 10, 1926, and will be continued on the following day. These tests must be completed by 8 p.m. on Saturday, Sept. 11, 1926. Aeroplanes not having done so will be debarred from taking part in the Competition.

A.—DISMANTLING, HOUSING AND RE-ERECTING.

For this Test the Aeroplane must be presented to the Officials fully erected.

It must then be dismantled or folded in such a manner as to permit of its being completely transported in one journey without the use of any extraneous tackle, over a distance of not more than 25 yards, and placed in a shed 10 feet in width and 10 feet in height. It must then be taken outside the shed and re-erected.

Two persons only will be allowed to handle the Aeroplane throughout this Test, and the time occupied must not exceed one hour.

No special devices will be allowed unless carried as part of the equipment of the Aeroplane in flight during the Competition. Such equipment will not be weighed or considered as part of the useful load.

B.—DEMONSTRATION OF DUAL CONTROL.

This test will consist of two separate flights of not less than five minutes' duration each, within sight of the aerodrome, at the termination of each of which one figure of eight must be flown within the boundary of the aerodrome.

The pilot must be alone and occupy alternately the two seats in the Aeroplane.

C.—GETTING OFF.

This Test will consist of a take-off, starting from rest and flying in a straight line over two barriers 25 feet high and placed 25 yards apart. The distance from the starting point to the first barrier will be 300 yards. This distance is based on a wind not exceeding 6 miles per hour.

The wheels of the Aeroplane will be placed on the starting line. The start will be a standing one. No assistance, launching devices or chocks will be permitted for the actual getting off.

D.—PULLING UP.

This Test will consist of a straight landing over a barrier 6 feet high. The length of run must not exceed 125 yards. This distance is based on a wind not exceeding 6 miles per hour.

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MOTH

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AEROPLANE



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EX WORKS

READY TO FLY

AWAY

"Using a light aeroplane costs little more than running a fair-sized car—a de Havilland "Moth" for instance, with its air-cooled Cirrus engine, can do about twenty miles to the gallon of ordinary petrol and a small quantity of ordinary oil. And it can do these twenty miles at about 80 miles an hour so that for week-ending and touring, as the Master of Sempill has shown, the "Moth" can beat the car".....

Special correspondent to the "Morning Post" in a Series of articles on "FLYING FOR ALL"



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The engine may be shut off before crossing the barrier.

Any form of braking device may be used provided it is carried throughout the Competition.

The distance will be measured from the centre of the barrier in a straight line to the furthest point of contact of the Aeroplane with the ground. Only normal straight landings will be measured. In the event of damage to the Aeroplane which in the opinion of the Stewards would prevent further flight, the attempt would not count.

Eliminating Tests C and D must be performed with the total load which the machine is to carry throughout the Competition.

In the case of failure to carry out tests C and D with the load anticipated, the load may be reduced to a figure not less than 340 lbs., but the load at which the machine finally passes the tests shall be deemed to be the maximum load carried for the purposes of the Competition.

All Competitors will be allowed a number of attempts in these Tests, but any Competitor failing to start within five minutes of his allotted starting time will not be allowed to start and this will count as an attempt. Additional attempts will be allowed in the same order as time permits.

THE FUN OF THE FAIR.

For the benefit of intending visitors to Lympne one would point out that these eliminating tests are really quite the most amusing part of the competition, and the Aero Club did well to hold them on the Friday and Saturday.

The dismantling, housing and re-erecting test will perhaps not be quite so amusing as it was in the early days of such competitions. In these days all the little gadgets and things such as quick-release bolts and so forth have been so well tried that they are not likely to give much trouble either in taking to pieces or putting together. And the Moths merely swing their wings on hinges.

In the old days the putting-together-again business was very nearly as amusing as watching somebody else do a jig-saw puzzle. But at any rate this part of the Competition is likely to be quite interesting as showing the complete ease with which small aeroplanes can be handled and housed by two people.

The dual control demonstration is apt to be a trifle dull, but it does afford onlookers a chance of seeing the machines in the air under the best conditions. And if the pilots are wise they will take the opportunity of showing off their machines to the best advantage during this test.

One would remind pilots that in these days everybody carries a camera and that by flying low and slowly past the public enclosure they will have a lot of photographs taken by people in the crowd. Which photographs will ultimately afford their employers a great deal of free publicity.

The getting-off test is apt sometimes to be dangerous, as pilots are liable to stall their machines in the effort to get over the barrier, especially if the machine is a trifle sluggish in getting off the starting line. But one may assume that all the pilots who will be flying in this competition know their jobs too well to do anything silly.

The pulling-up test should be particularly interesting, in that it will give some notion of the ability of the various machines to sink without stalling and diving and to remain under control when stalled.

Three of the machines have flap wings, but so far as one knows not one of them as any of the modern scientific wing curves which are alleged to give control below stalling point. The proviso that both the getting-off and landing tests must be done with the full load which is to be carried during the competition will prevent any undue advantage being given to machines with very big lightly loaded wings which are too slow to be useful transport vehicles.

One is inclined to disagree from the regulation that only normal straight landings will be measured. Surely the test is meant to show whether a machine can be got into a small field or not, and if a particularly skilful pilot can do a very short landing by side-slipping or swish-tailing surely he is entitled to do so, for it would at any rate demonstrate the controllability of the machine at very low speeds.

THE COURSES TO BE COVERED.

18. Competition.—The Competition will be over Courses totalling approximately 2,000 miles. The total distance must be flown at an average speed of not less than 50 m.p.h.

The following are the Courses:—

SUNDAY, SEPT. 12.—Lympne to Brighton and back, 106 miles. (This circuit must be covered twice and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 318 miles.

MONDAY, SEPT. 13.—Lympne, Eastbourne, Lympne, Hastings, Lympne, 124 miles. (This circuit must be covered three times and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 372 miles.

TUESDAY, SEPT. 14.—Lympne, Dover, Ramsgate, Margate, Herne Bay, Lympne, 62 miles. (This circuit must be covered six times and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 372 miles.

WEDNESDAY, SEPT. 15.—Lympne to Brighton and back, 106 miles. (This circuit must be covered three times and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 318 miles.

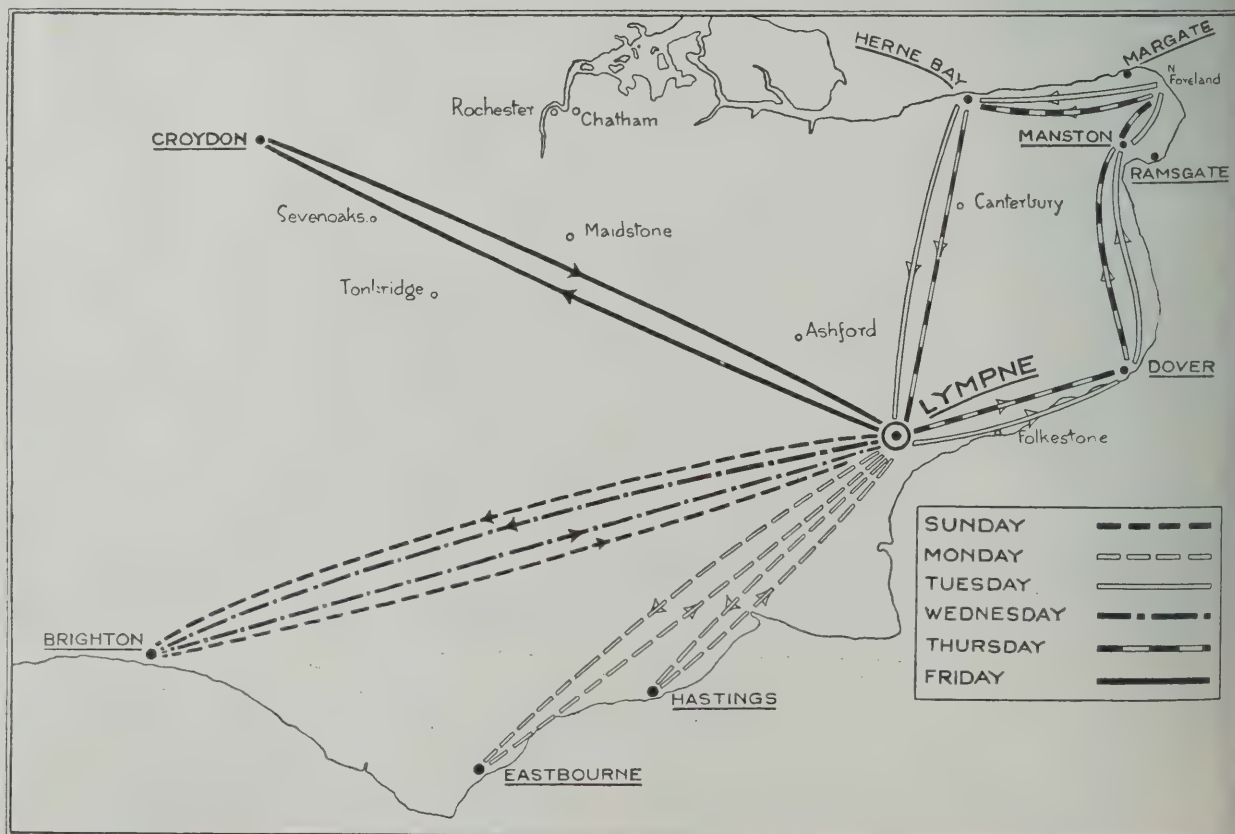
THURSDAY, SEPT. 16.—Lympne, Dover, Ramsgate, Margate, Herne Bay, Lympne, 62 miles. (This circuit must be covered six times and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 372 miles.

FRIDAY, SEPT. 17.—Lympne to Croydon and back, 106 miles. (This circuit must be covered three times and alightings made at Lympne Aerodrome on the completion of each circuit.) Total for day, 212 miles.

Total, 1,964 miles.

The arrangement of the various courses, all except the Lympne to Croydon course, was apparently intended to give the British Public a chance of seeing the competing machines. The assumption evidently was that at this time in September there would be a large population at the various seaside resorts. As a matter of fact one does not imagine that the people who are holidaying on the South coast at this time of the year are of the class which is likely to buy small aeroplanes in quantities.

If the idea was to interest a possible buying public it would have been better to have laid out a course over the hills of Scotland and Yorkshire, or at any rate over some of the more expensive golf clubs. The class of people who spend big money on sport do not go



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to Brighton and Eastbourne and Folkestone in September. Christmas is more like their time.

As a matter of fact the Hythe-Brighton course will mostly be over open down-land where nobody will see the machines at all, and a straight compass course from Lympne to Eastbourne gasworks will bring the machines quite a good way out to sea off Pevensey, which is not desirable.

THE PRIZES AND WHY.

Each course must be completed on the day allotted for that particular Course between the hours of 8 a.m. and 8 p.m. Any Competitor failing to complete the Course within the specified time and date will be eliminated from the Competition.

The First Prize of £3,000 will be awarded to the entrant of the Aeroplane which having complied with all the requirements laid down carries the greatest useful load per unit of fuel consumed.

The useful load is 340 lbs., which includes the weight of the Pilot and Passenger (if carried), plus any ballast carried as further load, up to the weight specified by the Certificate of Airworthiness.

The Second Prize of £1,500 and the Third Prize of £500 will be awarded respectively to the entrants of the Aeroplanes which are placed second and third.

The regulation about the times is a little bit inconsistent with the regulation about the repairs. A man may not replace an aileron damaged in a forced landing, although the job can be done in half-an-hour. But he can spend hours every day changing valves or making adjustments to his machine without any penalty.

To allow the machine twelve hours in which to cover a course each day, the longest of which is 372 miles, is palpably absurd. It means that a machine with a speed of only a little over fifty miles an hour can quite possibly win the first prize. In fact it means that machines which are too slow to be of any practical value as aerial vehicles may quite well win all the prizes.

Of course if a machine is absurdly slow it will have to be in the air for such a long time that it will absorb more fuel than it would if it flew faster. On the other hand anything like a high speed machine must use more fuel in getting its speed even though it remains in the air for only a short time.

The prize-winning machine should, bar accidents, be one which will cover each course at the most economical speed. In a flat calm one imagines that a machine with very big wings, and consequently low loading per square foot of wing, and a speed of about seventy miles an hour, would be most likely to win. But if the days are windy then the fairly fast machines will certainly put up the best show.

The idea of the qualifications for winning is no doubt to produce an aeroplane which with limited horse power will carry the biggest possible load across country. But to have made the Competition really effective, the regulations should have insisted upon a full-out speed of at least 100 m.p.h. One imagines that the machine which wins will not have a top speed of more than 80 m.p.h. at most. And anyhow the Competition is more a test of engines and installations and gadgets on which the running of the engines depends than of aeroplanes of any sort.

The Society of Motor Manufacturers' and Traders' Prize.—Two Hundred Guineas.

At the conclusion of the Competition a Race on handicap will be held over a course of approximately 100 miles. This race will be open to the Aeroplanes taking part in the Light Aeroplane Competition which shall have accomplished at least 50 per cent. of the Course in the Competition.

This race ought to be rather interesting. Being purely a speed race the pilots will naturally go all out the whole way, whereas in the Competition itself they will nurse their engines, partly with the idea of avoiding putting any strain on the engines which would be liable to cause a breakage, and partly with the idea of using as little fuel as possible. Consequently the speed at which they cover the various courses will give no indication of their real top speeds. The S.M.M. and T. race will not only disclose the top speed of each machine but it will also give an opportunity of discovering the weak points in any engines which may be left in flying trim after a week of flying.

Such engines ought to be in very fine form by the time they start in this race. They will have had very nearly 2,000 miles running at considerably less than full power, so everything ought to be nicely "run in," and anything which was going to shake loose ought to have been shaken loose.

Therefore, provided that any machines survive the 2,000 miles, Aviation will really have something for which to thank the S.M.M. and T. It will be very nearly the first time that Aviation has had that privilege.

Taking it all round the wealthy motor manufacturers of Great Britain have taken precious little interest in aviation. Very few of them have taken an active part in the making of aero-engines, with the exception of a few who made vast wealth out of war contracts between 1914 and 1919.

If some of them had been a little more far-sighted they might have done quite a good deal to help the progress of Aviation, and might ultimately have put money in their own pockets. The more credit is due therefore to the Beardmore firm and the Rolls-Royce people and the Napier people and the old Siddeley-Deasy firm for having tackled aero-engine work in the early days of the War.

GENERAL CONDITIONS.

Competitors or their Pilots purposely flying over the Public Enclosure or outside the regular course without permission of the Stewards will be liable to disqualification and suspension. The Stewards have the right to prohibit any flying when, in their judgment, such flying is likely to be dangerous to the public or other pilots.

In the event of a tie by two Competitors for the First Prize,

the total of the First and Second Prizes will be equally divided between the Competitors making the tie.

In the event of a tie by more than two Competitors for the First Prize the total Prizes will be equally divided between the Competitors making the tie.

In the event of a tie for the Second Prize the total of the Second and Third Prizes will be equally divided between the Competitors making the tie.

In the event of a tie for the Third Prize it will be equally divided between the Competitors making the tie.

A Competitor by entering the Competitions thereby waives any right of action against the Royal Aero Club, the Air Council or the Donors of Prizes for any damage sustained by him in consequence of any act or omission on the part of any of the Officials of the Royal Aero Club and the Air Council or their representatives or servants or any fellow-Competitor.

A Competitor's Aeroplane or Aeroplanes or representatives or servants shall at all times be at the sole risk in all respects of the Competitor or his Entrant, who shall be deemed by entry to agree to waive all claims for injury either to himself, his Aeroplane or Aeroplanes, or his representatives, employees or workmen, and to assume all liability for damage to third party, or their property, and to indemnify the Royal Aero Club, the Air Council or the Donors of Prizes in respect thereof.

A Competitor by entering thereby agrees that he is bound by the regulations herein contained or hereafter to be issued in connection with these Competitions.

The interpretation of these Regulations or of any to be hereafter issued shall rest entirely with the Royal Aero Club.

Competitors alone shall be responsible to the Officials for the due observance of these Regulations, and shall be the persons with whom the Officials will deal in respect thereof or of any other question arising out of the Competitions.

The Committee of the Royal Aero Club reserves the right to add to, amend, or omit, any of these Rules, should it think fit.

These conditions are all quite reasonable. Whether pilots fly over the public enclosure or not will, one imagines, depend largely on the direction of the wind. The class of pilot who is flying in a serious competition of this kind is not likely to indulge in silly stunting over the crowd (if any) just for fun. And previous experiences of Lympne suggest that the composer of the regulations was properly cautious in using the phrase "public enclosure" in preference to the word "crowd."

The clause about flying "outside the regular course" is a little puzzling. The regular course between any of the turning points is a straight line according to Euclid's definition. And as such a line has length without breadth it will be a trifle difficult for any aeroplane to keep inside it unless it has an infinitely small span. Apart from that, the further a pilot wanders off the course the worse for himself because he will use more petrol and will be longer in the air.

The rest of these General Conditions are merely framed to safeguard the Royal Aero Club against vexatious argument or against actions for damages.

Pilots who are inclined to argue will do well to remember that the word competitor means the entrant of the aircraft, and that the pilot is not his representative but merely his paid or honorary servant, and therefore has no *locus standi* in any argument on the interpretation of rules. This of course will not in the least prevent certain of one's best friends among the pilots from telling the Stewards of the Royal Aero Club and the Committee and the Secretary and all the other officials exactly what they think of them from time to time as occasion arises.

Supplementary Regulations II.

1. All tanks, filler caps, and carburettor float chamber covers must be provided with lugs or some other efficient means of facilitating sealing.

2. In case of a landing away from Lympne Aerodrome, a full report of the circumstances must be made in writing to the Chief Marshal on the return of the aircraft to Lympne.

The first of these is a proviso to prevent evil-minded competitors from committing either of two malpractices, (A) adding petrol illicitly, which could be done by landing at some pre-arranged place out in the country, and thus appearing to have used less petrol than they did in fact, or (B) adding dope and so getting more power out of their petrol and actually using less.

Of course, none of the competitors in this Competition would ever think of doing such a thing. But any organisation which controls a competition has to guard against malpractices.

The second is likewise a safeguard against malpractices, in that it makes it difficult for a pilot to land and pick up petrol or dope, but it is also an assurance that proper information will be given about any mishap which occurs in the course of any of the flights.

It occurs to one that in the event of a really wholesale crash in a forced landing the information may be somewhat delayed.

Supplementary Regulations III.

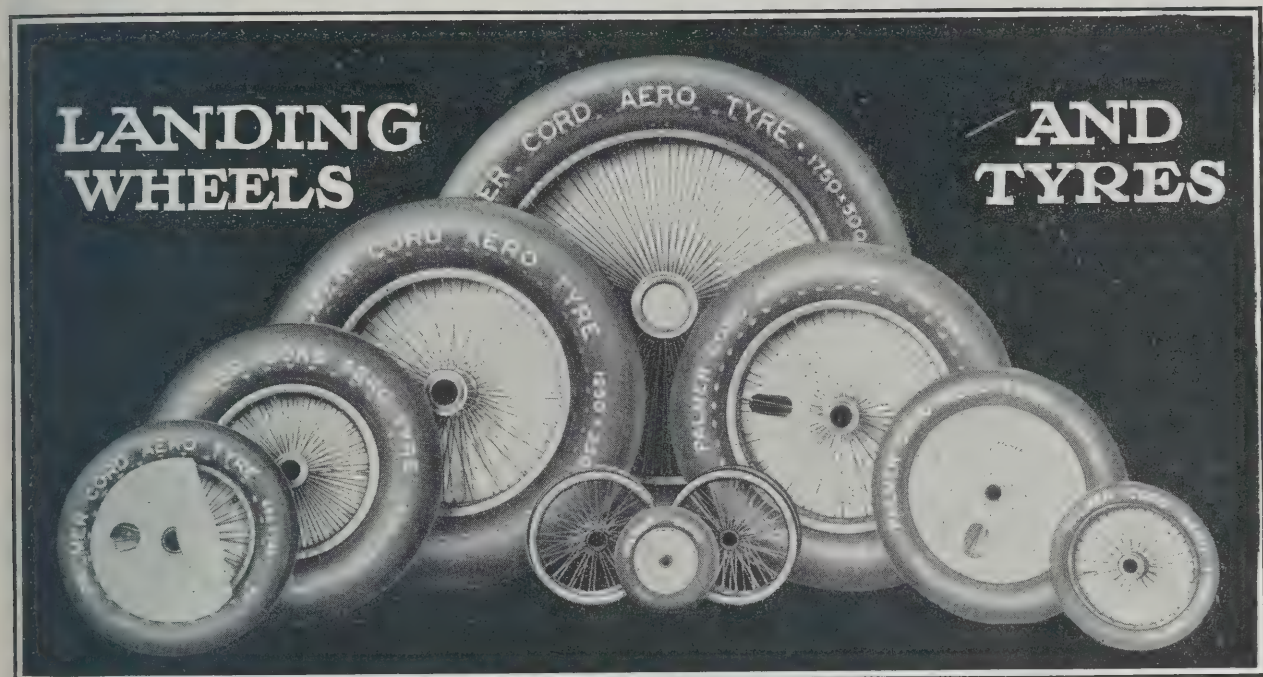
Fuel.—(See Supplementary Regulations I, No. 6.) This Rule was specifically framed in order to prevent the admixture of chemical dopes with ordinary petrol or mixtures of petrol and benzole.

The Rule was issued on Apr. 20, 1926, and has governed the preparation of engines and their accessories.

In fairness to all competitors therefore, the use of chemical dopes is still disallowed, even though in some cases supplies may have been increased.



PALMER



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 2.0 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 90 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | " | | | | |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | 1100 x 220 | 134 | 220. | 66.67 | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 136 | 250. | 80. | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 192 | 185. | 60.32 | Central |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 194 | 185. | 55. | 125/60 |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1700 x 300 | 93 | 400. | 25. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings. Grease run equipment is n w a standard fitting on all wheels.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

This is simply an explanation, more or less as already given, of the reason for No. 6 in the first batch of Supplementary Regulations. It is a difficult regulation to put into effect. Who is to decide the precise point at which a dope ceases to be a dope and becomes an ordinary commercial admixture with standard aircraft fuel?

There was a time when benzol might well have been considered a dope. In fact, if some High Authority decreed that only straight petrol was to be used in all our Service aircraft engines, a good many of our engines would have to be redesigned, or would at any rate have to have their compression considerably altered.

Benzol is added as a standard admixture in order to allow the use of higher compression. Some petrol detonates at a lower compression than others. Tetra-ethyl-lead will stop it from detonating, and possibly other chemicals may have a similar effect. If the proprietors of such petrol issue it for aviation purposes and arrange for it to be on sale at all aerodromes ready doped, why should it be any less a standard mixture than is the standard mixture of petrol and benzol? Mr. Cobham's adventures at Athens demonstrated the result of not having benzol dope at Lyon as a standard mixture.

Supplementary Regulations IV.

Load to be carried.—(See Regulation 7). Competitors must provide their own ballast which must be of such a nature as not to vary in weight, and which is capable of being easily weighed.

Thus it will not be advisable to carry salt, which would increase in weight on a wet day owing to its hygroscopic qualities, nor butter, which might melt on a hot day. Nor is it advisable to carry a fat and nervous passenger who might perspire freely owing to fear.

Identification.—(See Regulation 11.) The Official number for each aeroplane must be painted in black on a white surface on each side of the fuselage and on the lower surface of each of the lower main planes. This number must be as large as the surface permits. Government Registration Marks are not necessary for this Competition.

Apparently the amount of paint used in all this art decoration will not be allowed in the calculations for useful load.

Supplementary Regulations V.

THE TURNING POINTS.

Brighton.—Grand Stand on the Brighton Race Course. Competitors must turn round the Grand Stand leaving it on their Left.

Eastbourne, Lympne, Hastings.—Eastbourne: Three Gasometers N.E. Corner of Eastbourne. Lympne: White Cross on Aerodrome. Hastings: Hastings Castle. (Competitors must turn round these points leaving them on their Left.)

Dover, Ramsgate, Margate, Herne Bay.—The turning point at Dover is Dover Castle round which Competitors must turn leaving it on their Left. From Dover the Competitors proceed North to Manston Aerodrome, turning round the White Chalk Circle on the Aerodrome, leaving it on their Right, and thence N.E. to the North Foreland. 50 yards on the sea-side of the Lighthouse is a Wireless Mast which is the turning point. Competitors must turn round this point leaving it on their Left. Competitors are warned to fly higher than the mast so as to avoid fouling any of its aërials. From this point the course is due West passing at the rear of Margate, Westgate and Birchington to the Reculver Towers 3 miles East of Herne Bay, which is the Turning Point. Competitors must turn round this point leaving it on their Left. After passing the Reculver Towers the course is S.S.W. back to Lympne.

Croydon.—The turning point is the Control Tower situated

on the Aerodrome at Croydon. Competitors must turn round this point leaving it on their Left.

Alighting at Lympne.—Competitors will be timed on arrival at Lympne at the moment of crossing the Line in flight at a height of not more than 500 feet in either direction between the White Cross and the Timekeeper's Tent.

Observers.—Observers will be placed at each turning point round which Competitors must turn at a height of not more than 500 feet and at a sufficiently close range so that their identification numbers may be easily verified by the Observers.

Sheds.—The Shed containing the competing machines will be open each day from 7 a.m. until 9 p.m., by which time all machines must be inside the Shed.

Competitors and their staff will only be allowed in the shed between these hours.

Supply of Fuel.—Fuel will only be supplied to Competitors during the hours of competition, viz., between 8 a.m. and 8 p.m.

These turning points seem to be badly chosen. After having brought the competitors to fairly populous places presumably with the object of increasing the air-mindedness of the nation it is rather a pity not to give the British public an opportunity of seeing them.

Very few people are going to trek all the way up a mountain. Brighton Race Course to see a few machines hustle round a turning point—and no betting as an attraction. The turning point might just as well have been made round the Pier Head. The danger of an engine failure between the open downs and the pier at Brighton is certainly not as great as the danger of an engine failure when crossing the valley in which the town is situated between the Downs and Dover Castle.

Similarly, people at Eastbourne are not likely to travel all the way out to the Gas Works to see the machines turn. They might equally well turn either over the Pier Head or over Beachy Head.

Hastings Castle is likewise at the non-frequented end of the town, and the people on the beach and promenade will not see the machines at all.

The instructions for the various turning points at Dover, Ramsgate, Margate and Herne Bay sound rather like following a map of the maze at Hampton Court. And here again one is mildly intrigued to know why the course is arranged to pass at the back of Margate, Westgate and Birchington instead of right along the sea front—Not that the Margate visitor in September is likely to be the immediate purchaser of a Moth at £795.

The Regulation about sheds being open from 7 a.m. until 9 p.m. is really rather good. It does mean at any rate that people cannot sit up all night fitting a completely new set of valves for each day's flying.

Incidentally it would be interesting to keep some kind of a check on exactly how much time is put in during the Competition keeping each engine in tune.

The Society of Motor Manufacturers' and Traders' Prize, Two Hundred Guineas.—The course for this race has been reduced to 75 miles, i.e., six laps of 12½-mile circuit.

The Grosvenor Challenge Cup.—The course for this Race has been reduced to 75 miles, i.e., six laps of 12½-mile circuit. These alterations have been made so as to get the two races into the last Saturday afternoon.

So with that one leaves the readers of this paper to read, mark, learn and inwardly digest all the Rules and Regulations so that they may approach the Competition with a full knowledge of the arduous tasks set to the competitors, always bearing in mind that all this space and everybody's attention for a week is really being devoted to an endurance test of four little engines and their installations.

One wishes good fortune to all competitors, and may the best machine win.—C. G. G.

THE MAGNIFICENCE OF MILLIONS.

Mention was made last week of the fact that a Mr. Lowenstein, a millionaire, had chartered certain aircraft from Imperial Airways Ltd. and was using them to fetch people with whom he has financial dealings from various parts of Europe to his place of sojourn at Biarritz.

Apparently, under the International Air Navigation Agreements, a firm which operates aircraft may not send its machines to ply for hire or reward in the territory of another nation. One gathers that the French Government have raised some difficulties under this clause of the agreement and that in consequence Mr. Lowenstein has himself acquired from Imperial Airways the machines which were hired to him. Messrs. Minchin, McIntosh and Olley are remaining with Mr. Lowenstein to operate the machines.

All sorts of legends are going about concerning Mr. Lowenstein. One thing which is absolutely certain is that his money is good. Apart from that fact, rumour has it that he is concerned in the exploitation of water power for the production of electricity.

One legend has it that he has bought up numerous lakes and rivers suitable for giving water power, and has indicated to the owners that he is a convinced prohibitionist and wishes to secure his supply of water against the machinations of the producers of alcohol.

A newspaper story says that he has left or is leaving Biarritz for Barcelona. One could wish that he would acquire

both "Barcelona" and "Valencia" and embrace them within his ban of prohibition.

Whatever may be the truth there is no doubt that Mr. Lowenstein is giving a very fine advertisement to air transport.

AN ITALIAN ENGINE TEST.

The new 500 h.p. Isotta Fraschini "Asso" engine has just completed a very rigorous reliability test with success.

One engine of this type was fitted into a Savoia 16 flying-boat, and under the vigilance of a military commission of four members the machine carried out two preliminary six-hour flight tests, a climb to 5,400 m. (17,720 ft.) with 800 kgs. (1,764 lbs.) load and one to 5,100 m. (16,730 ft.) with 1,000 kgs. (2,205 lbs.) load.

Following on these tests, the machine flew every day for a fortnight from 07.00 hours to 13.00 hours and 14.00 hours to 19.00 hours—a total of 10 hours per day.

The average speed throughout was 180 km.p.h. (112 m.p.h.) so that a total of 27,000 kms. (16,780 miles) was covered in the course of the fortnight.

AN INVENTOR'S FATE.

The Havana correspondent of *The Times*, in a message dated Sept. 5, states:—

Señor Don Angel Arano, a Cuban inventor, was killed to-day while demonstrating his life-saving apparatus. Señor Arano, known as "the Cuban gull," stepped off an aeroplane at a height of about 2,000 feet over the Havana sea-front and fell into the sea like a stone, notwithstanding that his patented apparatus was designed to sustain him in air and water. The body was recovered badly injured.

THE AIRCRAFT AT LYPNE.

THE A.N.E.C. MISSEL-THRUSH.

The Missel-Thrush, built by the Air Navigation and Engineering Co., of Addlestone, is an unequal winged biplane fitted with a Blackburne Thrush three-cylinder radial engine.

The fuselage is of the three-ply covered box-type, of somewhat unusual shape. At the fireproof bulk-head immediately behind the engine the section is like the conventional shield of heraldry inverted. At the cockpits—which are in tandem—the section is rectangular with a domed top fairing.

Aft of the cockpits the two bottom longerons are made to approach each other more rapidly than are the top ones, so that the rectangular section merges into a triangular section under the front spar of the tail-plane.

Although the fuselage looks exceedingly small and slender, there is a very ample allowance of space in both cockpits, both of which give a most generous allowance of leg and elbow room, and a very comfortable seating position.

A roomy locker, which will contain two normal suit cases, is fitted behind the front seat and over the legs of the occupant of the rear seat, and above this there is another locker space in the fairing in which a nearly equal volume of smaller parcels can be carried.

The wings are fairly heavily staggered and the lower one is of smaller chord and of smaller span than the upper one. The pilot—who will normally use the front seat—has an excellent view downwards ahead of the lower wing, and from the after seat the wing interferes relatively little with the downward view.

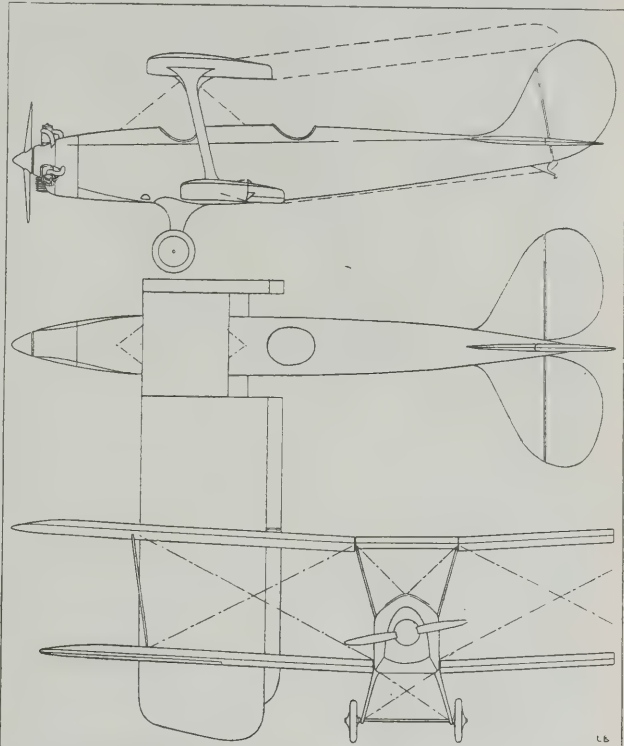
The lower wings are attached to a pair of stub roots built into the body. The upper wing consists of a centre section, supported by two I struts and a pair of extensions.

The wings as a whole hinge about the centre section and wing root rear spars, and fold without its being necessary to disconnect anything except the front spar locking gear. This locking gear incidentally has a spring clip incorporated, so that on opening the wings this clip will retain them in the open position, and therefore one man can fold and unfold single handed.

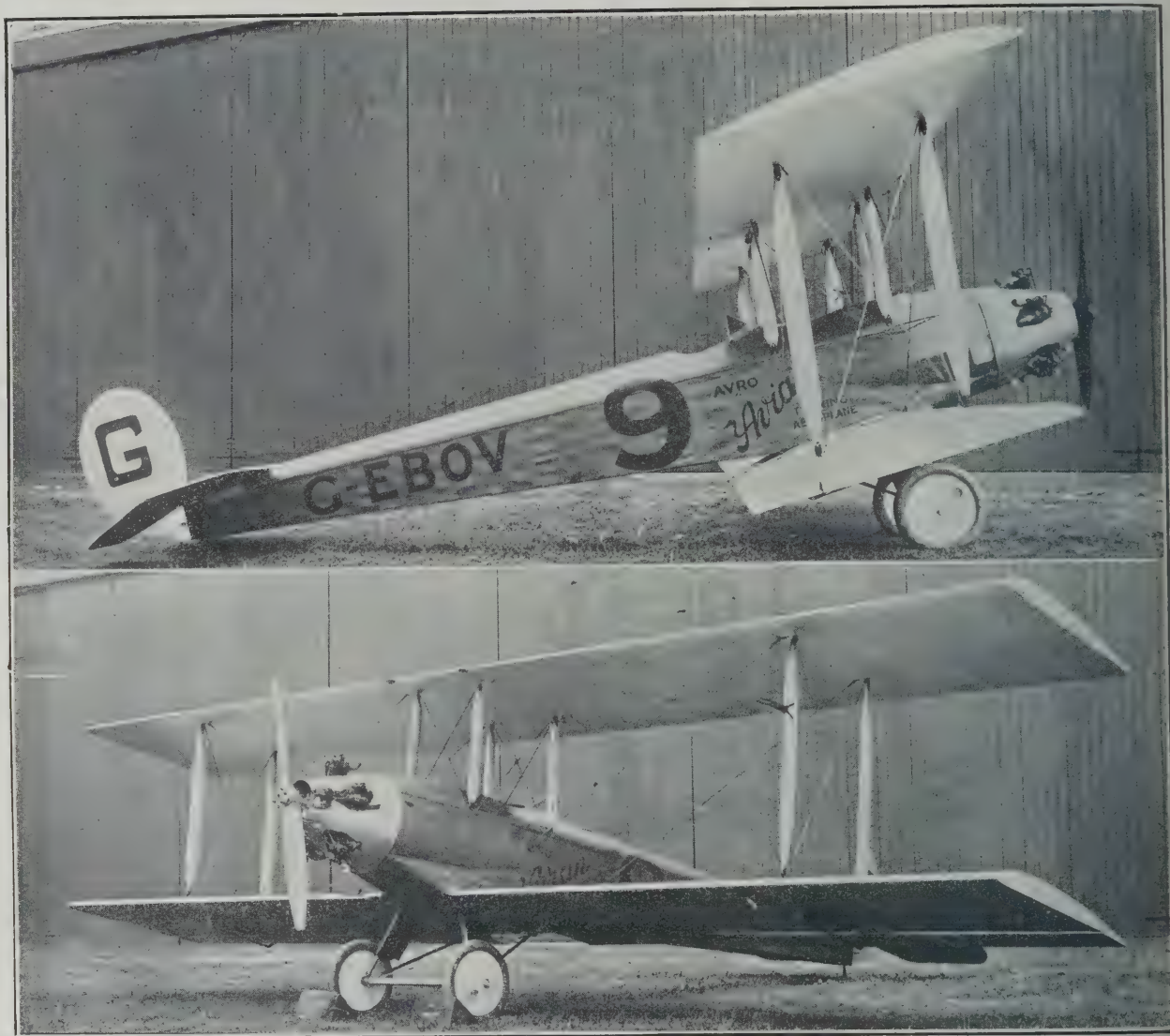
The wings are of a thin section, built on spruce and plywood box spars with spruce and three-ply ribs, and are fabric covered. They are braced by one I type interplane strut, on each side, with streamline wire cross-bracing. Ailerons are fitted on the lower wing only. The tail surfaces are of similar construction to the wings.

The undercarriage is essentially of the normal Vee type, but the two Vees are built up of a pair of curved steel tubes, and are completely faired in with three-ply. An undivided rubber-sprung axle is carried in guides formed in the undercarriage legs.

A petrol tank of six gallons capacity is fitted in the fairing ahead of the front cockpit, giving an ample head for gravity



THE A.N.E.C. MISSEL-THRUSH.—Blackburne Thrush engine, 30 h.p.



THE AVRO AVIAN.—Armstrong-Siddeley Genet engine, 60 h.p.

feed to the carburettor. The engine carries its own supply of oil in a tank attached to the crankcase.

The machine has been designed to comply with the requirements for a fully aerobatic C. of A. at a total weight of a little over 1,000 lbs., but with normal two-seater load weighs considerably less than this.

SPECIFICATION.

| | | | |
|------------------------|---------------|-------------------------|-------------------------|
| Span (top) | 28 ft. 0 in. | Weight empty | 480 lbs. |
| | (8.54 m.) | | (218 kg.) |
| Span (bottom) ... | 26 ft. 0 in. | Max. permissible weight | 1,050 lbs. (476 kg.) |
| | (7.92 m.) | Engine | Blackburne Thrush |
| Chord (top) | 4 ft. 6 in. | | (35 b.h.p.) |
| | (1.37 m.) | Wing loading | 5 lbs./sq. ft. |
| Chord (bottom) ... | 3 ft. 9 in. | | (24.4 kg./sq. m.) |
| | (1.14 m.) | Power loading | 30 lbs./h.p. |
| Wing area | 210 sq. ft. | | (13.6 kg./h.p.) |
| | (19.5 sq. m.) | Max. speed (estimated) | |
| Length 21 ft. 6 in. | (6.55 m.) | | 80 m.p.h. (129 km.p.h.) |
| Height ... 8 ft. 0 in. | (2.44 m.) | | |

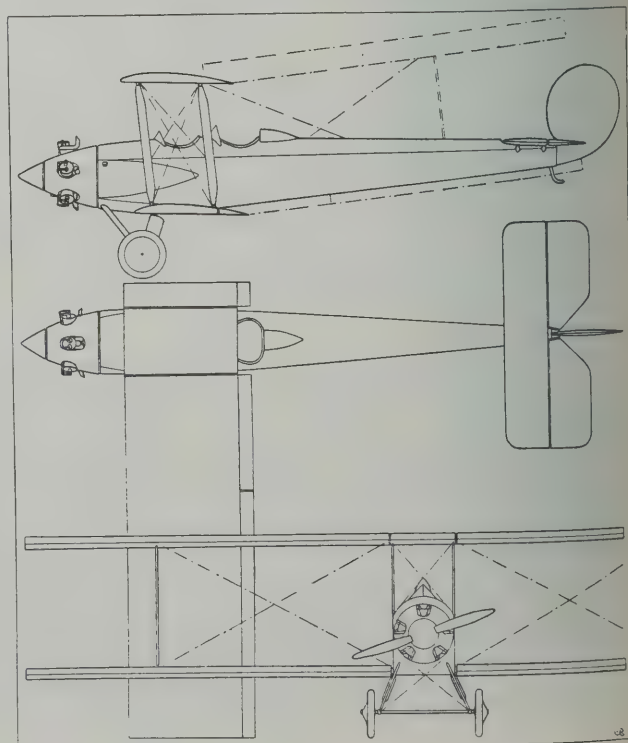
THE AVRO AVIAN

The Avian, built at the Hamble Works of A. V. Roe and Co. Ltd., is an equal-winged single-bay biplane with a slight stagger, fitted with the Armstrong-Siddeley Genet engine.

The most noticeable feature of the machine is the care with which the nose has been streamlined. The Genet—though a radial—is of small diameter, and has a fairly long nose to the crankcase, consequently it is possible to continue the lines of a well-proportioned spinner on the airscrew in the fixed cowling, and this has been done very effectively in the Avian.

The fuselage of the Avian is in the main of the usual rectangular section with the usual domed fairing on top. At the extreme nose the cowling is circular in section, merging into the line of the normal top fairing and into a pair of streamline "bulges" one on each side of the body which extend back to the front cockpit. This fuselage is of the three-ply covered type.

The two cockpits are in tandem, one between the wings and the other level with the trailing edges. Adequate wind



screens are fitted to both cockpits, and there is a streamline fairing to the head of the pilot in the after cockpit.

The engine is mounted upon a pyramidal box of rivetted up duralumin sheet bolted to the fireproof bulkhead. Very large hand-holes in the sides of the mounting give easy access to the carburettor when the external cowling is removed.

Petrol and oil tanks are carried in the top fairing immediately behind the bulkhead, giving a very direct pipe line to the engine.

The undercarriage is of the Vee type with a solid axle and deformable rear legs. The front legs are attached below the engine bulkhead and the after legs below the front spar of the lower wings.

The wings are of No. 64 section, with square tips, fitted with ailerons on the lower wing alone. The upper centre section is supported on four vertical struts, the lower wing attaches directly to the bottom of the fuselage. The wings are hinged to body and centre section at the rear spars and fold in the normal manner.

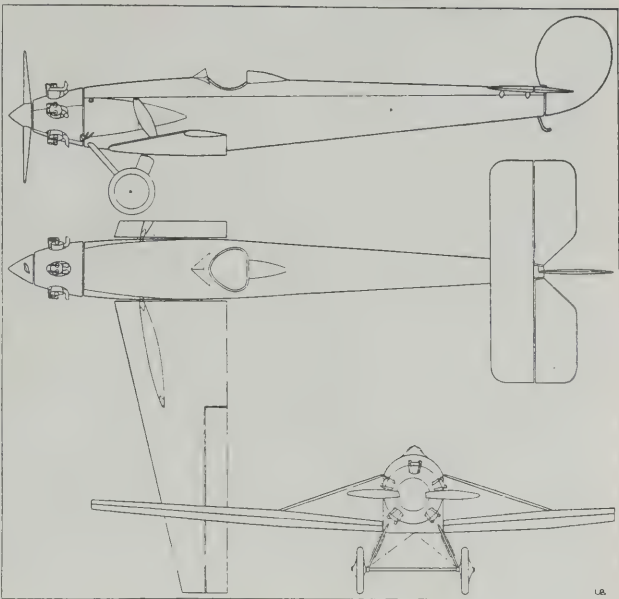
The tail-plane, elevator and rudder are in form strongly reminiscent of the 504 type Avro, but are entirely devoid of external bracing.

SPECIFICATION.

| | |
|---|---|
| Span ... 32 ft. 0 in. (9.77 m.) | Weight empty (approx.) 750 lbs. (340 kg.) |
| Length 24 ft. 6 in. (7.47 m.) | Weight loaded (approx.) 1,550 lbs. (705 kg.) |
| Height 8 ft. 0 in. (2.44 m.) | Wing loading 5.27 lbs./sq ft. (25.8 kg./sq. m.) |
| Wing area 294 sq. ft. (27.3 sq. m.) | Power loading 26 lbs./h.p. (11.7 lbs./h.p.) |
| Engine Armstrong-Siddeley Genet (60 h.p.) | |

THE AVRO AVIAN II.

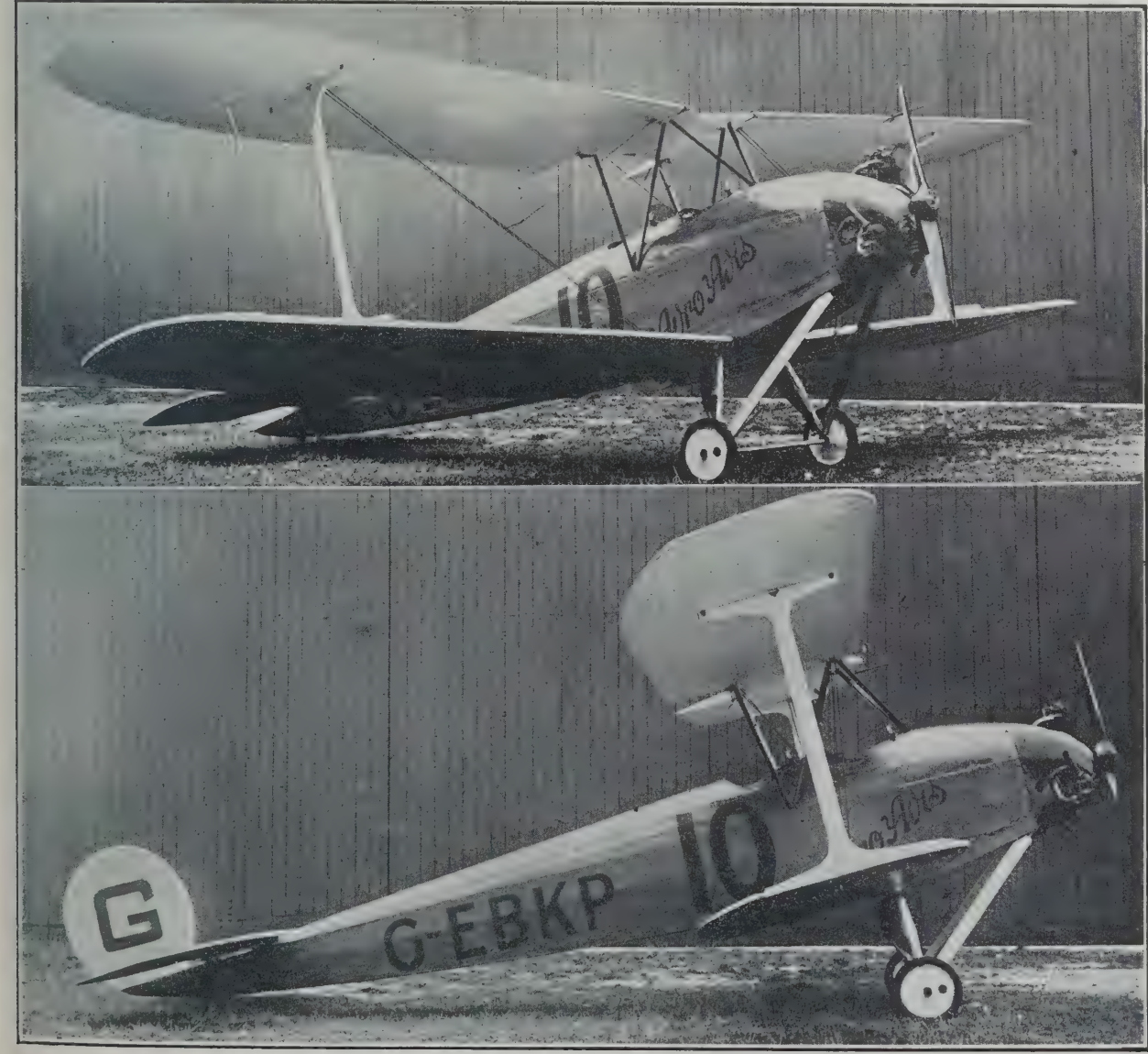
The Avro Avian II is a racing machine which will compete in the Grosvenor Cup Race. It consists of the fuselage



of the two-seater Avian with the front cockpit entirely faired in, and a small pair of monoplane wings attached to the lower rail of the fuselage.

These wings are of the thick, symmetrical R.A.F. 30 type, very heavily tapered in plan form and braced on each side by a single strut from the top rail of the fuselage.

In view of the extreme cleanness of the body and the ex-



THE AVRO AVIAN.—The 1924 Avro with the new Blackburn Thrush (30 h.p.).

ceedingly low drag which has been shown by R.A.F. 30 wing section, this machine may be expected to attain a very high speed.

SPECIFICATION.

Span ... 26 ft. 0 in. (7.93 m.) Wing area 75 sq. ft.
Length 24 ft. 6 in. (4.47 m.) (7 sq. m.)
Height 5 ft. 11 in. (1.8 m.) Engine Armstrong-Siddeley
Genet 60 h.p.

THE AVRO AVIS.

This machine will be familiar to most followers of the sport of aviation as it took part in the 1924 Lympne meeting and won the Grosvenor Cup in that year. It also appeared last year in the same race. In these earlier meetings it was equipped with a Bristol Cherub, but is to be fitted with the three-cylinder Blackburne Thrush or an A.B.C. Scorpion.

The Avis is a straightforward equal-winged tractor biplane, without stagger, having one single I strut between wings on each side. Pilot and passenger sit in tandem very close together, one under the leading edge, and one under the rear spar of the upper wing.

A "Vee" undercarriage with oleo shock absorbers in the rear legs is fitted.

The tail unit is marked by a partly-balanced rudder of the characteristic Avro shape and the absence of a fixed fin.

In construction the Avis follows normal lines, but in detail great care has been taken to keep weight down to a minimum consistent with safety.

SPECIFICATION.

Span ... 30 ft. 0 in. (9.15 m.) Wing area 255 sq. ft.
Length 24 ft. 0 in. (7.22 m.) (23.7 sq. m.)

THE BLACKBURN BLUE BIRD.

The Blackburn Blue Bird, although built in 1924 for the Lympne meeting, is not well known by sight except to those who may have visited the Blackburn aerodrome at Brough. Troubles with the engine originally installed kept it from appearing at the original two-seater light aeroplane meeting and it has not hitherto visited the south of England.

The Blue Bird is a side-by-side two-seater biplane with equal top and bottom wings, no appreciable stagger, but a definite sweep back towards the tips. This characteristic—together with the necessarily somewhat wide fuselage—should render her easily identifiable.

A five-cylinder Armstrong-Siddeley Genet engine has now been installed.

The fuselage as far back as the rear of the cockpit is built

up on two stiff box spruce plywood and steel frames into which are built side entrance doors. The after section of the body is built on four longerons, braced by spruce struts with three-ply gusset plates.

The wings—which fold on the rear spars—are of the normal spruce spar and girder rib construction and are supported by single-bay bracing. Drag and interplane struts are of duralumin tube.

The undercarriage is of the Vee type with a telescopic front leg incorporating compression rubber springing. The tail unit is marked by the very generous area of both fixed and movable surface, particularly as regards fin and rudder.

SPECIFICATION.

Span ... 28 ft. 0 in. (8.52 m.) Wing loading 5.2 lbs./sq. ft.
Length 21 ft. 8 in. (6.62 m.) (25.8 kg./sq. m.)
Height 7 ft. 11 in. (3.42 m.) Power loading 20.8 lbs./h.p.
Wing area 243 sq. ft. (9.8 kg./h.p.)
(22.5 sq. m.) Est. max. speed ... 75 m.p.h.
Engine Armstrong-Siddeley (121 km.h.)
Genet (60 h.p.) Landing speed ... 35 m.p.h.
Weight loaded 1,250 lbs. (56 km.h.)
(568 kg.)

THE BRISTOL BROWNIE.

The Bristol Brownie is another of the machines to appear at Lympne which was originally produced for the 1924 two-seater competitions. In that year the Brownie was very successful and attained a high place in the contest. For this year's competition it has been fitted with the Mark III Bristol Cherub engine, and certain modifications have been made to the cockpits, undercarriage and the cowling.

The alterations make a difference in appearance, particularly in the side view of the machine. The addition of top cowling throughout the length of the fuselage gives the machine more pleasing lines.

The Brownie is a low-wing cantilever monoplane of all-steel construction. The fuselage is of the normal longeron and strut construction with swaged rod cross-bracing except in the front bays, where cable bracing is employed. Longerons and struts are, however, solid drawn steel tube.

The wings are of a thick section, tapering in chord and thickness and set at a marked dihedral angle. The spars are built up with corrugated H.T. steel strip booms and steel tube diagonal members, and the ribs are of duralumin.

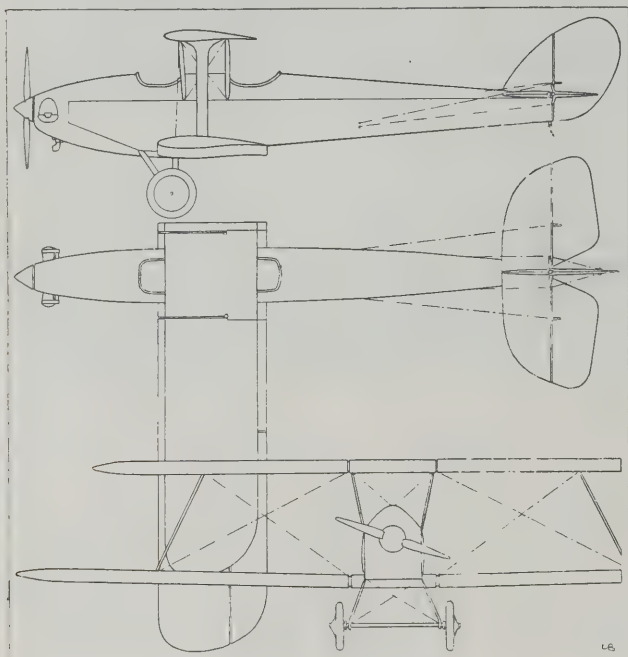
The tail unit is entirely above the body and in flying attitude very high above the chord. The rudder post is



THE BLACKBURN BLUE BIRD.—Armstrong-Siddeley Genet (60 h.p.)

(C.L.A.4 SPECIFICATION—continued.)

| | |
|-------------------------------|-------------------------------|
| Length 22 ft. 3½ in. (6.8 m.) | Engine Bristol Cherub |
| Height 6 ft. 7½ in. (2.02 m.) | (34 b.h.p.) |
| Wing area 164 sq. ft. | Wing loading 5.2 lbs./sq. ft. |
| (15.1 sq. m.) | (25.1 kg./sq. m.) |
| Weight empty 450 lbs. | Power loading 25.2 lbs./h.p. |
| (202 kg.) | (11.5 kg./h.p.) |
| Weight loaded 860 lbs. | |
| (390 kg.) | |



THE DE HAVILLAND MOTH.

The de Havilland entry for the competition is a standard Moth, apart from minor modifications to the nose of the fuselage and the engine mounting to take the Genet engine.

As the Genet is appreciably lighter than the original engine, it is necessarily carried somewhat further forward in the body. The engine mounting, which consists of two steel side plates with tubular steel bracing, fits onto the nose of the fuselage, which has been built up by the addition to the standard body of an extra panel of three-ply braced with spruce. Otherwise the structure is identical with that of other Moths. The reduced weight of the Genet, less the small addition to the structure required to mount it, will lead to a reduction of some 50 or more lbs. in the empty weight of the machine, and this saving, for the purposes of the competition, may be used to increase the useful load of the machine.

The Moth is now so well known that no lengthy description seems necessary. It may, however, be recalled that this type is an equal-winged, unstaggered, single-bay, folding biplane, seating two in tandem and normally equipped with dual control, which is easily removable from the front.

The fuselage is of standard de Havilland type with spruce longerons and struts and three-ply covering. The wings are on two box spars, with spruce and plywood ribs, with ailerons—differentially controlled—on the lower wings only. The tail unit is of conventional type. The undercarriage—of Vee type—has compression rubber springing.

In view of the fact that the Moth has already proved itself to be a thoroughly satisfactory machine of the class which the competition is designed to encourage, the success of this machine in the contest will be rather a gauge of the merits of the competition rules than a test of the Moth.

SPECIFICATION.

| | |
|---------------------------------|-------------------------------|
| Span ... 29 ft. 0 in. (8.84 m.) | Weight loaded ... 1,250 lbs. |
| Length 23 ft. 6 in. | (568 kg.) |
| (7.17 m.) (approx.) | Engine Armstrong-Siddeley |
| Height 8 ft. 7 in. (2.60 m.) | Genet (60 h.p.) |
| Wing area ... 225 sq. ft. | Wing loading 5.5 lbs./sq. ft. |
| (21 sq. m.) | (27 kg./sq. m.) |
| Weight empty 720 lbs. | Power loading 21 lbs./h.p. |
| (326 kg.) (approx.) | (9.4 kg./h.p.) |

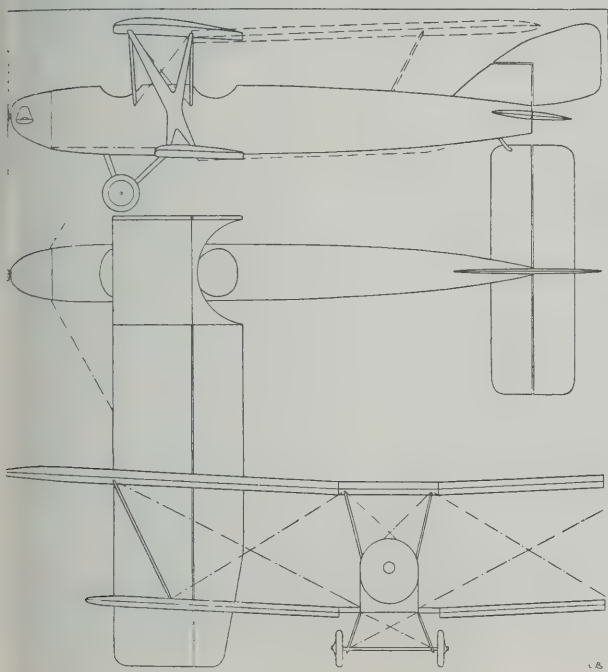


THE DE HAVILLAND MOTH.—Armstrong-Siddeley Genet (60 h.p.).

THE HALTON H.A.C.I.

This machine, designed by members of the educational staff of No. 1 School of Technical Training, and built under their supervision by the aircraft apprentices at Halton Camp in the school workshops, is a first-class example of high-grade workmanship, and a very high testimonial to the quality of the training which is given at this school.

The H.A.C.I. is an unequal winged biplane, with a Bristol Cherub III engine. The fuselage is rectangular, built on four spruce longerons, braced by diagonal struts over the



forward section, and covered throughout in plywood. A domed fairing is fitted over the upper surface.

The engine is carried by a light but extremely strong mounting built up of steel sheet which suggests that Halton pupils of the present day are already well able to handle modern all-metal structures. Seats are in tandem, the front one being well ahead of the leading edge of the lower wing and having an excellent view in all forward directions, and the rear one has a very good view downwards over the leading edge, and as the lower wing roots are cut back to the rear spar, a view vertically downwards is also available.

The lower wing—which is of small chord—is staggered

back so that its rear spar is vertically beneath that of the upper wing, thus simplifying the design of folding gear. An upper centre section is carried on four outwardly splayed struts and contains a petrol tank of 11 gallons' capacity. Ailerons extending from centre section to tip are carried on the top wings only. One bay interplane bracing is provided, with a pair of X type interplane struts on each side. Spars throughout are glued up spruce boxes, and ribs are of the all-spruce girder type.

Fin and rudder—the latter balanced—are entirely above the fuselage, and the fixed tail-plane is followed by an undivided elevator. The undercarriage is of the steel tube Vee type, rubber sprung, with an undivided axle.

A Fairey Reid airscrew has been provided for this machine by Mr. C. R. Fairey.

It is unfortunately very unlikely that the machine will be ready in time for the main competition, but it is hoped that it will appear in time to take part in the race for the Grosvenor Cup.

SPECIFICATION.

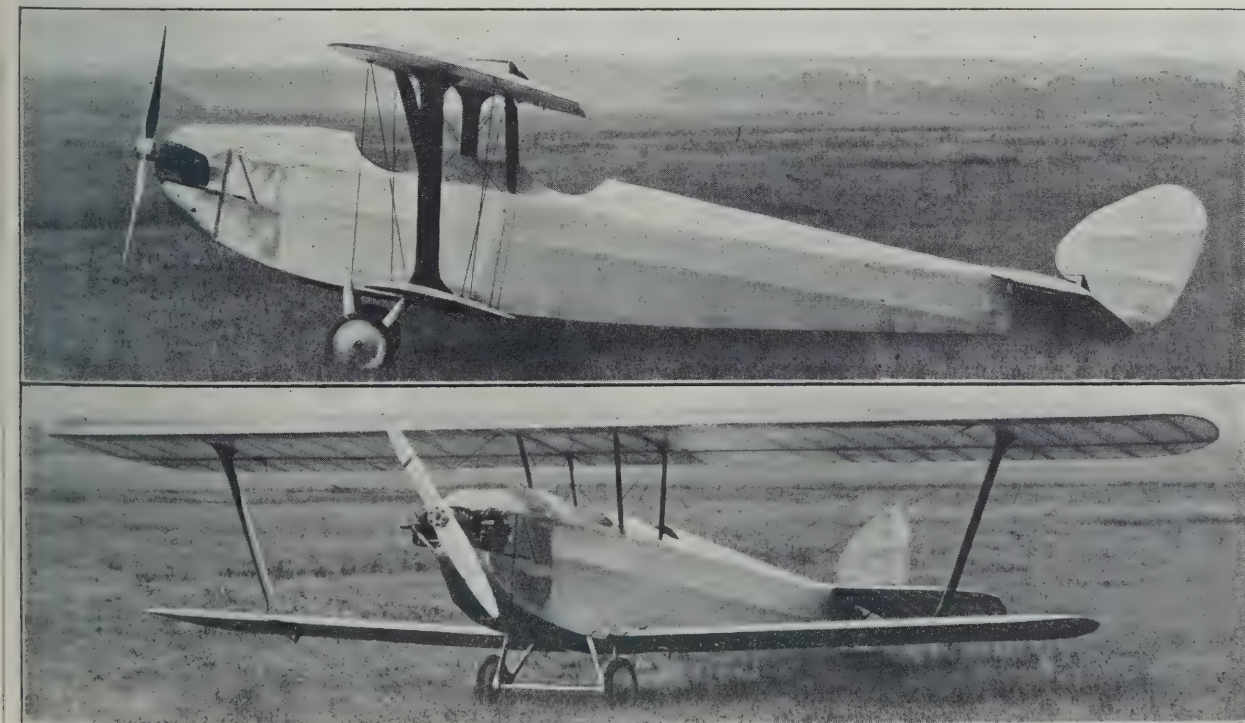
| | |
|--|---|
| Span (top) 28 ft. 6 in. (8.7 m.) | Engine Bristol Cherub |
| Span (bottom) ... 20 ft. 0 in. (6.1 m.) | 34 b.h.p. |
| Chord (top) 4 ft. 9 in. (1.45 m.) | Weight loaded 880 lbs. (400 kg.) |
| Chord (bottom) ... 3 ft. 3 in. (0.98 m.) | Wing loading 4.5 lbs./sq. ft. (22.2 kg./sq. m.) |
| Total wing area 195 sq. ft. (18 sq./m.) | Power loading 25.8 lbs./h.p. (11.75 kg./h.p.) |
| | Max. speed (est.) 76 m.p.h. |
| | Min. speed (est.) 36 m.p.h. |

THE HAWKER CYGNETS.

Both of the Hawker Cygnets which competed at Lympne in 1924 have been entered for this year's contest. One of them, which was presented by Messrs. Sopwith and Sigrist to the R.A.E. Aero Club, is entered by that body, and the other by Mr. Sopwith and Mr. Sigrist jointly. In 1924 the two had different engines; this year both have Bristol Cherubs (Mk. III), but there are minor differences arising from the fact that the R.A.E. Club are responsible for their own engine installation, whereas the other machine has been converted by the Hawker Engineering Co. Externally there may be a very slight difference in the cowling lines, but this will scarcely be detectable except on the closest scrutiny. The chief difference is likely to be due to the fact that the R.A.E. Club's entry has a Fairey-Reed airscrew.

The Cygnets are single bay tractor biplanes with folding wings. The fuselage is rectangular with a domed fairing built on spruce longerons braced by diagonal spruce struts. The seats are in tandem, and fuel tanks are carried in the fairing at the top of the body ahead of the front seat.

The upper wing is of greater chord and span than the lower one and there is a stagger which is less than the difference in the chords, so that in plan the lower wing is entirely within the projection of the upper. Trailing edge flaps are



THE HAWKER CYGNET.—Bristol Cherub III (34 h.p.) entered by the R.A.E. Club.



THE PARNALL PIXIE III.—Bristol Cherub III (34 h.p.).

fitted over the span of both wings to reduce landing speed and facilitate taking-off.

The interplane bracing consists of four upper centre section struts, two I type interplane struts, and streamline wire cross-bracing.

The tail unit consists of a balanced rudder and a normal fixed tail plane with divided elevators.

SPECIFICATION.

| | |
|---------------------------------|-----------------------------|
| Span ... 28 ft. 0 in. (8.55 m.) | Wing area 165 sq. ft. |
| Length 20 ft. 5 in. (6.22 m.) | (14.5 sq. m.) |
| | Engine Bristol Cherub |
| | Mark III (34 b.h.p.) |

THE PARNALL PIXIE III.

The Pixie III is a low-wing monoplane with wings braced at about one-third of the half-span from the body by inverted Vee struts. The type is so designed that an upper wing may be added producing a biplane of considerably increased area and of lower landing speed.

In the biplane form two machines of this type took part in the 1924 competition equipped with Bristol Cherub (Mk. II) engines. For this year's event, a Cherub Mk. III is fitted, to one machine, which will appear as a monoplane.

The fuselage is mainly spruce framed, with glued and screwed-on three-ply gussets for joints. At points of major stress, such as wing attachments, steel tubes replace the normal struts. The wings are of unusual plan form, being of uniform chord for about one-half of the span, and then tapering somewhat abruptly to about half of that chord at the tips. The taper is entirely achieved by sweeping forward the trailing edge, the leading edge being straight and at right angles to the line of flight throughout.

The undercarriage is unusual in that an unbroken axle is carried by two legs which are completely unbraced. These legs originate at the top rails of the fuselage at the same point as the attachment of the wing-bracing struts, are attached to the root of the front spar, and project downwards and forwards to the axle.

The section beyond the fuselage is telescopic, and fitted with steel springs and an oil dashpot, but takes the fore and aft component of landing loads mainly in bending.

The tail consists of a triangular fixed tail plane, with divided elevators, a triangular fin and a very much rounded rudder. The rudder post rakes forward and upward.

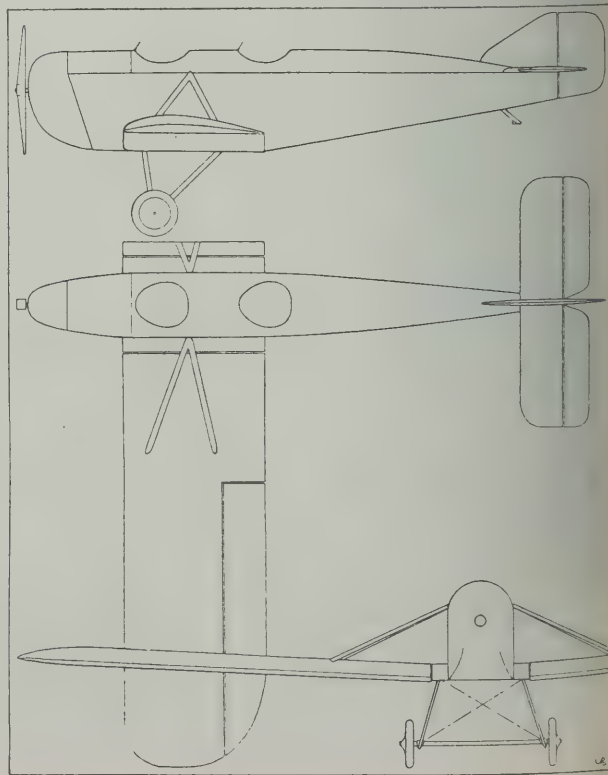
SPECIFICATION.

| | |
|----------------------------------|-----------------------------|
| Span 32 ft 4 in. (9.85 m.) | Wing area 140 sq. ft. |
| Length ... 21 ft. 3 in (6.47 m.) | (13 sq. m.) |
| | Engine Bristol Cherub |
| | Mk. III (34 b.h.p.) |

THE R.A.E. CLUB'S SIROCCO.

The Sirocco, designed and built by the members of the R.A.E. Aero Club for the Lympne Competitions, is of the low-wing monoplane type. It was originally designed before any decision as to the precise type of engine to be used and an allowance of 170 lbs. was made for engine weight. Also the fuselage was made of a cross-section which will permit of fairing in the outline of almost any possible engine. Actually a Bristol Cherub III is fitted, which is some 70 lbs. lighter than the allowed weight, and the machine will therefore benefit by this reduced weight. At the same time, the large body may somewhat handicap the machine in performance.

The Sirocco is of very simple and straightforward construction.



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tion. Primarily this was dictated by the fact that the machine was constructed by the members themselves in their spare time and that relatively small workshop facilities are available. But there is an additional advantage in that the machine will also be extremely robust and simple to repair in the event of minor accident.

The fuselage is of rectangular section, with four square spruce longerons, rigidly braced by spruce struts attached with glued and screwed-on plywood gussets. It is very roomy, particularly in regard to depth—a feature which allows of an upright seating position and consequently of fairly close spacing of the seats fore and aft without cramping the cockpits.

The Cherub engine is carried from the front bulkhead on a simple tubular mount, and oil and petrol tanks are carried immediately behind that bulkhead giving a very short and direct feed to the engine. The fuel tank has a capacity of 11½ gallons.

The undercarriage, which is of the conventional rubber-sprung Vee type, is of steel tube and has the very ample track of 5 ft. 0 in.

The wings are of the usual two-spar construction, attached to wing roots at the bottom edge of the fuselage and braced by a pair of inverted "Vee" struts—one on each side—running to about one-third the half span out.

The spars are of box section with spruce stringers and three-ply sides, and taper both in width and depth from root to bracing point and bracing point to tip. The wing section itself does not, however, taper and is uniformly of "Air-screw 4" section over the main portion of the span.

Ribs are entirely of spruce—of the diagonally braced type—and drag struts are plywood-sided box girders, with solid wire drag bracing. The wings do not fold, but are rapidly detachable and are packed alongside the fuselage for transport.

Tail plane, elevators, and fin and rudder follow the wings in general construction, main members being boxes and ribs spruce girders. There are no spindled out wooden members throughout the aircraft, and metal fittings are used in only small numbers—and those of very simple form. Altogether the Sirocco is a very robust and straightforward construction—a feature singularly important in small aircraft intended for private use, but unfortunately not one encouraged by the rules of the Lympne contest.

SPECIFICATION.

| | |
|--|---|
| Span ... 33 ft. 0 in. (10.05 m.) | Engine ... Bristol Cherub III (34 h.p.) |
| Length ... 21 ft. 0 in. (6.4 m.) | Wing loading 6 lbs./sq. ft. (29.2 kg./sq. m.) |
| Height ... 5 ft. 0 in. (1.52 m.) | Power loading 26.4 lbs./h.p. (12 kg./h.p.) |
| Wing area 150 sq. ft. (14 sq. m.) | Est. max. speed ... 78 m.p.h. (125 km.p.h.) |
| Weight empty (approx.) 595 lbs. (270 kg.) | Est. landing speed 35 m.p.h. (57 km.p.h.) |
| Weight loaded (maximum) 900 lbs. (408 kg.) | |

THE SHORT SATELLITE.

This machine, built by Short Bros. Ltd., appeared at Lympne in 1924, fitted with a Bristol Cherub Mark II. It has since been presented to the Seven Aeroplane Club by Mr. Oswald Short and has been fitted with an A.B.C. Scorpion Mk. II engine. In its present form it has flown very successfully.

The Satellite has an all-duralumin monocoque body, with cantilever monoplane wings of composite construction attached a little above the centre line of the body. These wings have timber spars, duralumin ribs and fabric covering. Wing flaps extending over the whole span serve both as ailerons and as camber-changing devices.

The undercarriage is of the Vee type, with a deformable front leg attached below the front wing spar root and rear legs running back to the bottom of the body. The axle is of the hinged type attached also to the bottom of the body.

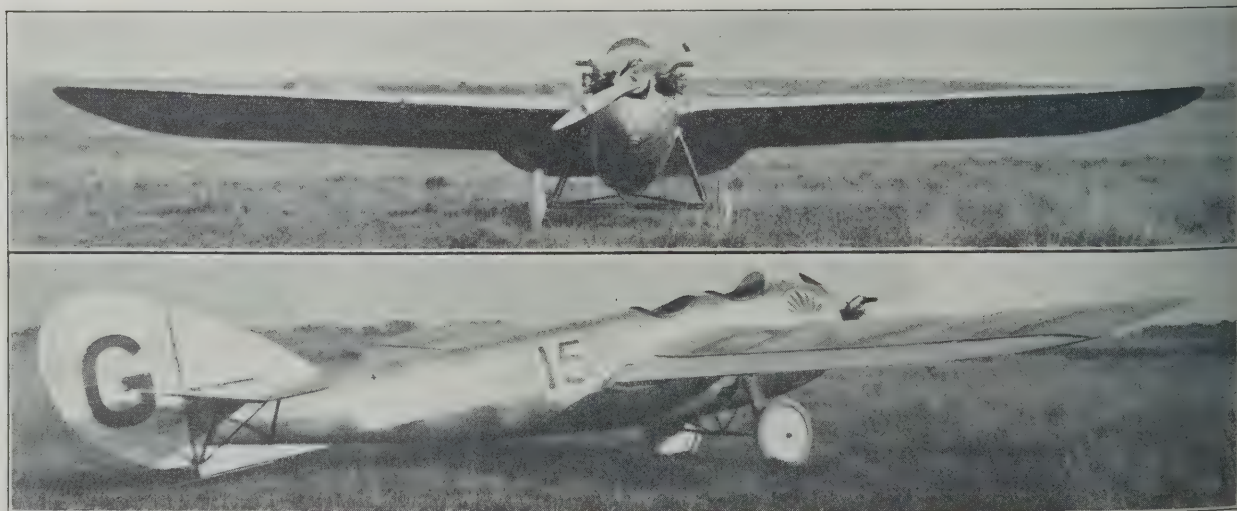
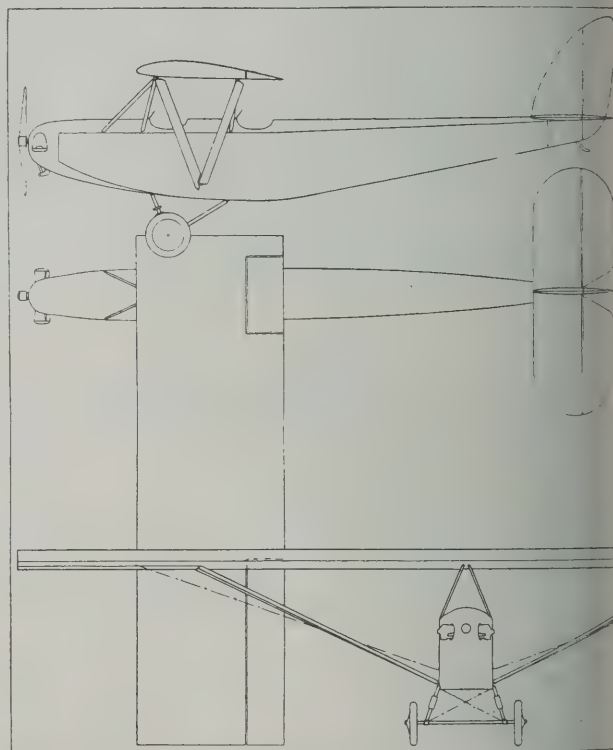
SPECIFICATION.

| | |
|---|---|
| Span ... 34 ft. 0 in. (10.72 m.) | Weight ... loaded 1,060 lbs. (482 kg.) |
| Length 23 ft. 9 in. (7.22 m.) | Wing loading 6.4 lbs./sq. ft. (30.4 kg./sq. m.) |
| Wing area 168 sq. ft. (15.6 sq. m.) | Power loading 30.2 lbs./h.p. (13.7 kg./h.p.) |
| Engine A.B.C. Scorpion Mk. II (35 h.p.) | |

THE SUPERMARINE SPARROW II.

The Sparrow II has been built by the Supermarine Aviation Works rather as a means of testing wings at full scale than with an eye to the Lympne Competitions, and has been entered in that contest purely in the interests of the sport of flying.

The object in view in design being tests on scale effect, the machine is a high-wing monoplane with a clean, unbroken



THE SHORT SATELLITE.—A.B.C. Scorpion II (37 h.p.).

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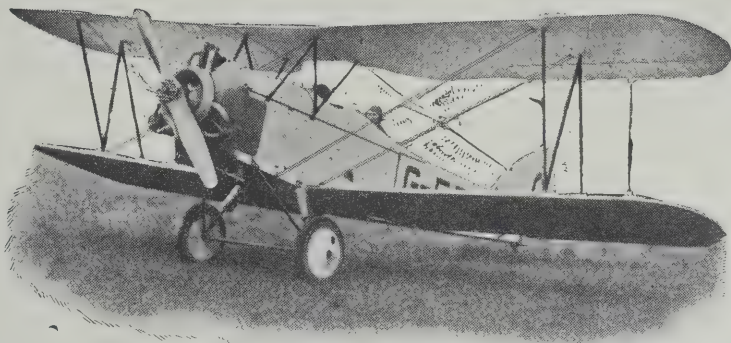


THE SUPERMARINE SPARROW II.—Bristol Cherub III (34 h.p.). (Described on the preceding and following pages.)



THE WESTLAND WOODPIGEON.—A.B.C. Scorpion II (37 h.p.). (Described on the following page.)

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The exceptional simplicity, reliability and safety of both aircraft and engine, the marked economy in consumptions and upkeep, and its unique qualities for instructional work, have combined to gain for the machine its high reputation. The "Bristol" Lucifer School Machine should be included in the equipment of every flying school.

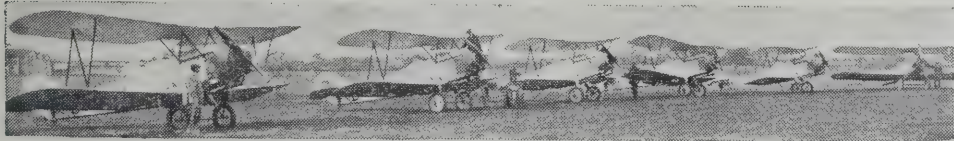
In one school a number of these machines have been in service for nearly 3½ years, and every machine is still in a condition practically as good as when it was first put into service.

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wing of aspect ratio 6 placed about 2 ft. above the body to reduce as far as is possible any interference effects of body or wing.

The fuselage used is that built in 1924 for the Sparrow biplane which took part in the 1924 Lympne meeting, and apart from the provision of a new engine mounting and cowling has been very little altered. It is of rectangular section, built on spruce longerons and three-ply covered.

The wing is of a thick American section known as the Clark "Y" and in order that direct comparison with model tests may be rendered easy it is of parallel chord and section and has square tips. It is built in one piece and supported on the centre line by a steel tube cabane. It is further braced by two sets of Vee struts from the bottom of the fuselage, extending to over halfway out along the span.

The undercarriage is of Vee type with a telescopic front leg and an unbroken axle.

Pilots and passengers are seated in tandem, one below the front spar and one behind the rear spar.

SPECIFICATION.

| | |
|---|---|
| Span ... 34 ft. 0 in. (10.3 m.) | Weight empty 572 lbs. (259 kg.) |
| Length ... 23 ft. 0 in. (7.0 m.) | |
| Height ... 7 ft. 5 in. (2.29 m.) | Max. weight loaded |
| Wing area 192 sq. ft. (17.8 sq. m.) | 1,000 lbs. (452 kg.) |
| Engine ... Bristol Cherub III (34 b.h.p.) | Wing loading 5.2 lbs./sq. ft. (25.4 kg./sq. m.) |
| | Power loading 29.5 lbs./h.p. (13.3 kg./h.p.) |

A REMARKABLE CIRCUIT.

Capt. Stanovsky, of the Czecho-Slovakian Army, and M. Simek, chief mechanic of the Aero Co. of Prague, have just completed a flight round Europe on an Aero 11 biplane (240 h.p. Breitfeld-Danek Perun II engine), in which they covered a total distance of 14,725 kms. (9,175 miles).

Their itinerary was as follows:—Prague—Marseilles—Barcelona—Rabat—Fez—Casablanca—Lagos—Lisbon—Madrid—Paris—London—Brussels—Rotterdam—Copenhagen—Stockholm—Utti—Reval—Riga—Kovno—Warsaw—Bucharest—Constantinople—Angora—Constantinople—Athens—Brindisi—Rome—Vienna—Prague.

Numerous circuits of Europe have been made from time to time, but none have had the completeness of this flight. With the exception of slight damage caused by a forced landing at Lagos, in Portugal, the flight was singularly free from trouble.

THE U.S. AIR MAIL.

The Postmaster-General, Mr. New, has announced that the U.S. Government would soon be calling for private tenders for the New York—San Francisco air mail, and he laid emphasis on the importance of contractors arranging to carry passengers and express luggage also, if they wished the service to be profitable.

He said that the New York—Chicago night mail was already paying more than working expenses, as were the pas-

THE WESTLAND WOODPIGEON.

The Westland Woodpigeon is a tandem two-seater folding wing biplane originally designed in 1924 by the Westland Aircraft Works with one eye on the terms of the 1924 Competition and another to the possibility of carrying out economically tests on a near approach to full scale. The original Woodpigeon took part in the 1924 Lympne meeting, and finished second in the race for the Grosvenor Cup.

It is an equal-winged biplane, with a slight stagger and dihedral, arranged to fold, and fitted with trailing edge flaps over the whole of both wings to act both as ailerons and camber changers. It has a single bay of interplane bracing.

The fuselage is of rectangular section, built of spruce longerons and struts with swaged rod bracing, carrying two tandem seats. The undercarriage is of the Vee type with a telescopic front leg to which a friction damping device is fitted. The tail unit is of conventional form and includes an ample fixed fin and a large rudder.

The machine has been entered by the Seven Aeroplane Club, in whose possession it now is, and has been fitted with an A.B.C. Scorpion Mk.II engine.

SPECIFICATION.

| | |
|----------------------------------|---|
| Span 27 ft. (8.46 m.) | Wing area 200 sq. ft. (18.6 sq. m.) |
| Length ... 20 ft. 9 in. (6.3 m.) | |
| Height 7 ft. 1 in. (2.16 m.) | Engine A.B.C. Scorpion Mk. II (35 h.p.) |

senger-carrying services from Salt Lake City to Los Angeles and from Jacksonville to Tampa and Miami.

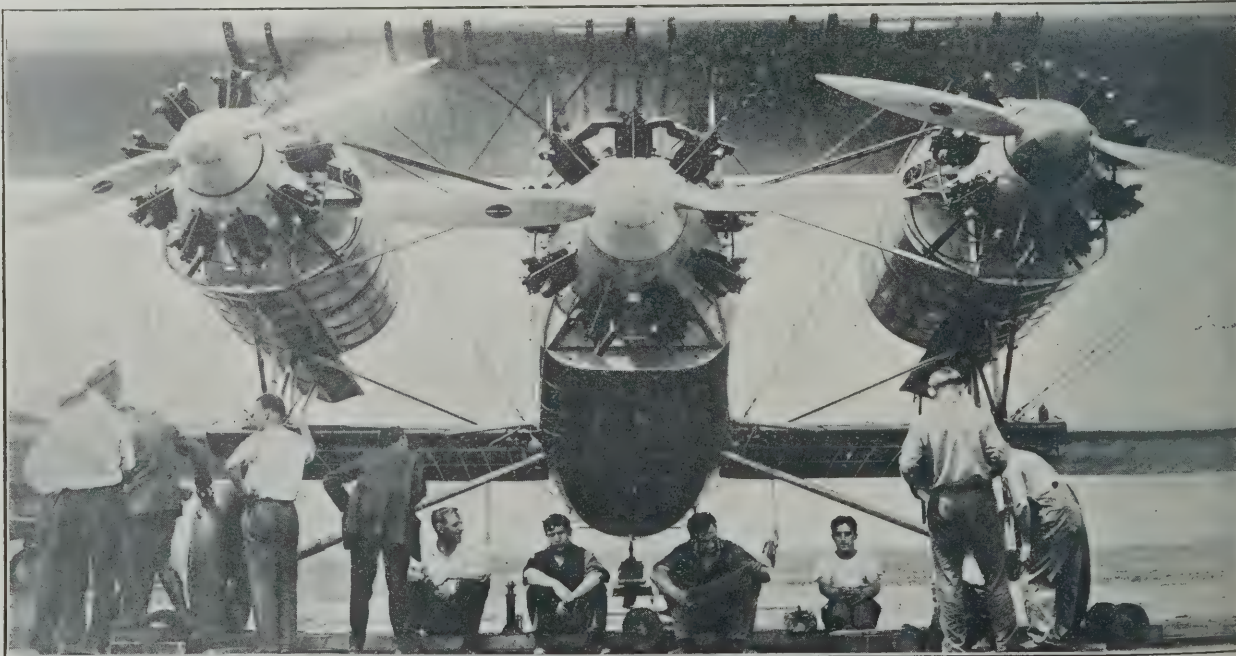
THE FONCK FIASCO. II.

The projected New York—Paris flight still continues to supply nonsense news to the daily press. Following on the summary given in last week's issue it is now reported that the financial backers of the flight have forbidden any further trial flights of the machine, until the nose-pulling contest between Capt. Fonck and Capt. Berry is settled.

Col. Harold H. Hartney the General Manager of the sponsoring organisation, has expressed the fear that to permit either Fonck or Berry to handle the controls of the S.35 in their present agitated state of mind would be dangerous.

One remembers a game played during the War 1914-18 wherein two pilots would ascend in a dual-control D.H.6, climb to a pre-determined height, go into a dive and the first of the two pilots to pull out of the dive on approaching the ground would be responsible for the financial settlement of certain drinks ordered. Col. Hartney, who served with distinction in the R.A.F., possibly has this game in mind. Only, owing to the improbability of either of the two pilots being willing to stand the other a Coca-Cola or a lime-juice, he has called the game off.

One suggests that the whole outfit should go into vaudeville or take a pitch in the Amusement Park of the Philadelphia Sesqui-Centennial Exhibition.—L. B.



A GOOD BEGINNING.—The front end of the Sikorski biplane which is intended to fly the Atlantic. It has three Jupiter engines, so at any rate that much is a serious proposition.



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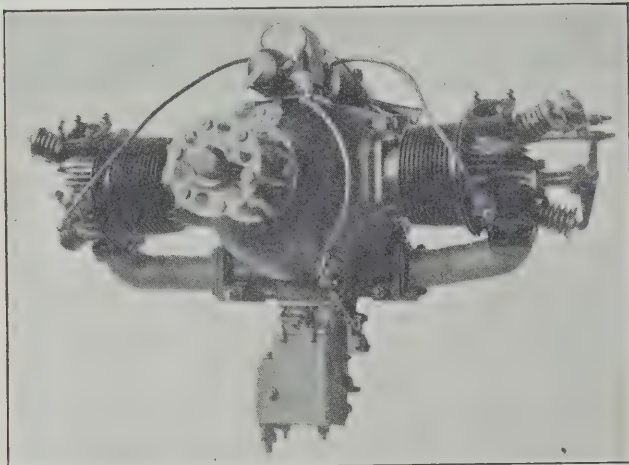
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THE ENGINES AT LYMPNE.

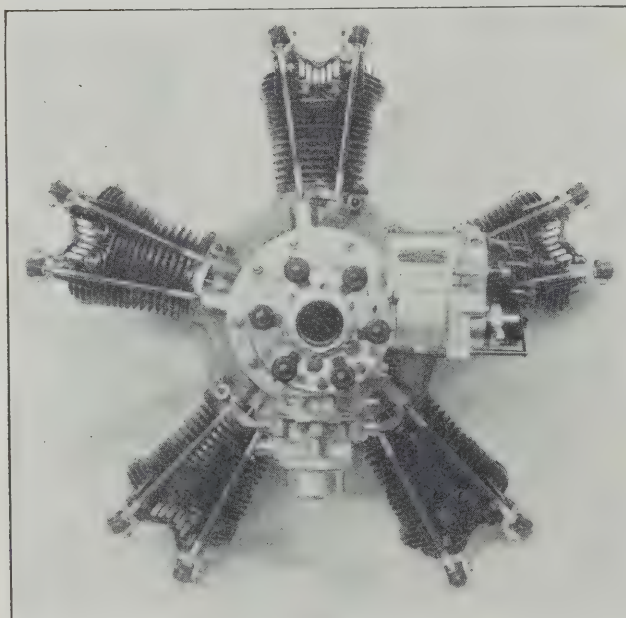
THE A.B.C. SCORPION MK. II.



General Characteristics:—Horizontally-opposed, two-cylinder, air-cooled type. Steel cylinders, cast-iron heads with inclined valves, push-rod operated. Crankcase and front cover in one casting of aluminium alloy. Dry-sump lubrication. Provision for two magnetos if required. Impulse starter.

| | |
|------------------------|--|
| Bore | 101 m/m. (4 ins.) |
| Stroke | 93 m/m. (3.66 ins.) |
| Normal output | 37 b.h.p., 2,500 r.p.m. |
| Max. output | 42 b.h.p., 2,800 r.p.m. |
| Weight | 105 lbs. (48 kg.) |
| Fuel consumption | .55 pints (.31 litres) per h.p. hour. |

THE ARMSTRONG-SIDDELEY GENET.



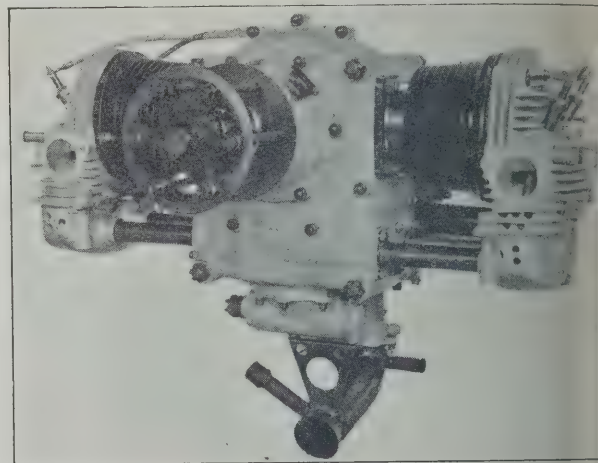
General characteristics:—Five-cylinder, air-cooled radial. Steel cylinders, screwed and shrunk on aluminium heads, with inclined valves, push-rod operated. Single-piece crankshaft, with counterbalance weights. Forged "Y" alloy pistons. Oil pumps and magnetos mounted on front cover of crankcase, Zenith carburettor at back communicating with induction chamber containing a mixing fan. Dry-sump lubrication, and provision for dual ignition (single ignition only available within the weight limit for the Lympne competition).

| | |
|------------------------|--|
| Bore | 4 ins. (101 m/m.) |
| Stroke | 4 ins (101 m/m.) |
| Normal output | 60 b.h.p., 1,800 r.p.m. |
| Max. output | 72 b.h.p., 2,035 r.p.m. |
| Weight | 168 lbs. (77 kg.) |
| Fuel consumption | .57 pints (.32 litres) per h.p. hour. |

THE BRISTOL CHERUB MK. III.

General Characteristics:—Horizontally-opposed, two-cylinder, air-cooled type. Steel cylinders with aluminium heads bolted on. Valves radial to cylinder bore, and operated by horizontal rocking shafts. Aluminium alloy pistons and crankcase. Single-piece crankshaft in bearing journals. Floating bush big ends. Dry-sump lubrication and dual ignition.

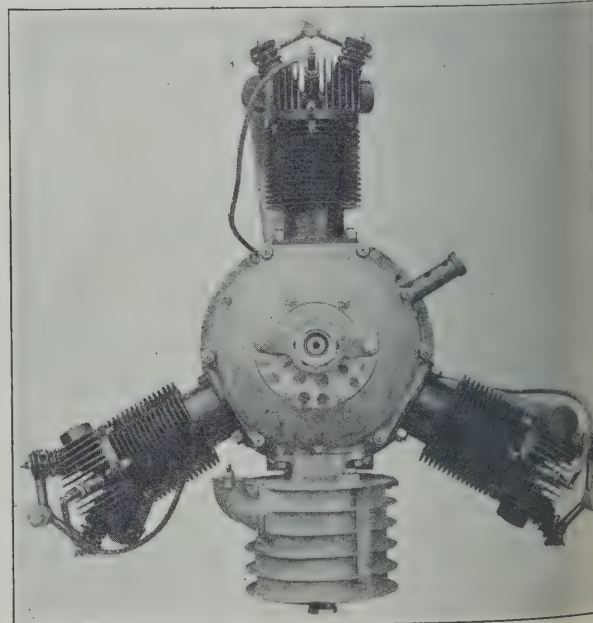
| | |
|------------------------|---|
| Bore | 90 m/m. (3.54 ins.) |
| Stroke | 96.5 m/m. (3.7 ins.) |
| Normal output | 34 b.h.p., 2,900 r.p.m. |
| Max. output | 36 b.h.p., 3,200 r.p.m. |
| Weight | 98 lbs. (39.5 kg.) |
| Fuel consumption | .53 pints (.3 litres) per h.p. hour. |



THE BLACKBURNE THRUSH.

General Characteristics:—Three-cylinder, air-cooled radial. Steel cylinders, cast-iron heads and inclined valves, push-rod operated. Independent connecting rods with roller big-end bearings. Large combined sump, oil tank and oil cooler attached to crankcase. Single ignition and single pressure pump lubrication.

| | |
|------------------------|--|
| Bore | 81 m/m. (3.18 ins.) |
| Stroke | 97 m/m. (3.82 ins.) |
| Normal output | 30 b.h.p., 2,500 r.p.m. |
| Max. output | 38 b.h.p., 2,760 r.p.m. |
| Weight | 132 lbs. |
| Fuel consumption | .58 pints (.33 litres) per h.p. hour. |





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Length Overall...50'-7" Span (Spread)...86'-6" Unladen Weight...9,900 lbs.
Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...6,850 lbs
Approx. Full Speed...108 mph. Minimum Speed...46 m.p.h.

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(TWIN 450 H.P. NAPIER "LION" ENGINES)
(on service in Iraq).



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Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...7,945 lbs
Approx. Full Speed...104 m.p.h. Minimum Speed...48 m.p.h.

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"MAGELLANS OF THE AIR."

["The First World Flight." Being the personal narratives of Lowell Smith, Erik Nelson, Leigh Wade, Leslie Arnold, Henry Ogden and John Harding. Written by Lowell Thomas. Hutchinson and Co. (Publishers) Ltd., Paternoster Row, London. 303 pages, 90 illus., 2 maps. 24s. net.]

The first flight round the world started from Seattle on Apr. 6, 1924, and fifty per cent. of the starters completed the course on Sept. 28, 1924. The flight was undertaken by the United States Army Air Service. The machines were Douglas biplanes built to U.S.A.A.S. specifications and fitted with 400 h.p. Liberty engines. The entire personnel were members of the U.S. Army Air Service.

All this is now a matter of history but in his book Mr. Lowell Thomas has endeavoured to turn a story of administrative efficiency combined with pluck and endurance into a kind of film scenario. The book, on the whole, has much interest. Even Mr. Lowell Thomas's purple patches of sob-stuff have been unable to spoil the simple humorous narratives of the men who did the job, but it is a great pity that he did not leave well alone and rest content with the adventurers' own stories of their great adventure. For their sake the book is well worth reading.

The history might well start at Chapter VII, where the story of the actual flight begins. And, except for a short account of their flight across America and the ghastly behaviour of hysterical mobs, it might equally well end at the landing at Icy Tickle, using the words of the Commander of the Flight:—"We had landed after our travels like the Pilgrim Fathers on a large rock but I'm afraid our first actions were not as edifying as theirs. We were just too darned happy for words."

The first six chapters of the book are devoted to the life stories of the members of the expedition, described in a thanksgiving prayer by a U.S. Army chaplain, on their return, as "these Magellans of the air." The stories are told in a way which must be as nauseating to the men themselves as it is to the reader. These crude personalities are reflected in the subsequent references to each member of the flight by a diminutive of his Christian name. The biographical notes are not arranged in any sort of order and the reader is constantly searching through about sixty pages to try and identify "Hank," "Les," "Smiling Jack," etc.

The general arrangement of the book is erratic and the illustrations are scattered about in the wildest confusion. It is almost impossible to muster any facts or results of the expedition from Mr. Lowell Thomas's book. But it is interesting to note, on the authority of *The Aircraft Year Book*, 1925, the official publication of the Aeronautical Chamber of Commerce of America, that the three machines which covered the main part of the journey used seventeen engines, seven new airscrews and fitted seven new pontoons, apart from those on which they crossed the Pacific and the Atlantic.

Although he makes continual reference to the fact that the crews of the different machines signalled to each other the Historian does not indicate what method of signalling was used. Another thing which leaves the more or less thoughtful reader guessing, and could probably have been explained by the pilots themselves, is the question of flying through fog. There does not seem to be any adequate reason why, during the flight from Reykjavik to Fredriksdal along the coast of Greenland, the pilots should not have used the uttermost ceiling of which their machines were capable, instead of flying a few feet from the surface of the water.

Presumably they were flying a compass course and extra height would have assured their clearing some of the icebergs. Also, although a mountain may be equally unyielding at its summit and at its base, it is somewhat narrower at the top. It was in this same area that the Italian Locatelli's machine was wrecked about the same time and its crew saved by one of the American fliers' attendant ships only after being adrift for three and a-half days. The comments of an average seaman on the prospect of driving through dense fog in that region at 90 m.p.h. for eleven hours would be illuminating.

In his description of the arrival of the expedition at Ambala Lieut. Erik Nelson pays a generous tribute to the hospitality and technical assistance given to them by the Royal Air Force. But if the Historian is to be believed, he is inclined to run amok in his facts. He is alleged to have said:—"British aviators in India were all using Liberty motors." It seems incredible that Mr. Nelson did not know that Bristol Fighters, the equipment of four out of the six Service Squadrons in India, are not, and never were, fitted with Liberty engines. Only the two bombing Squadrons, Nos. 27 and 60, have D.H.gas with Liberty engines.

To Lieut. Ogden also is attributed a stretch of imagination. He says:—"..... The British have nearly as large an air force here (India) as we have in the whole of the United States." The number of R.A.F. officers in India in 1924 was roughly 210, whereas the U.S. Air Services had about 1,700 officers at that time. Even presuming that the

U.S. Air Services had a higher proportion of officers to the number of enlisted men the figures are not comparable.

Some of the individual descriptions of the crew's adventures are delightful. One of the best is Lieut. Lowell Smith's story of his forced landing on a lagoon in Indo-China. The mad missionary who tried to buy cigarettes from him and his companion is only eclipsed by the story of the three priests who arrived in a sampan and swopped sacramental wine for a fifty-dollar bill for windows for their church.

The ordinary Englishman with his 1914-18 experience of the methods of the British Army will get a series of mild shocks when he reads this book. For example, Mr. Ogden having at that time the rank of Sergeant, "Lowell cabled Washington from Tokio asking General Patrick to make Hank a lieutenant like the rest of us, so from here on we were all lieutenants."

Another example of the American viewpoint is:—"..... we flew over the native state of Patiala, famous for the Maharajah's Championship Polo team."

The phraseology of the members of the flight is quaint but descriptive. The machines are sometimes referred to as "Thunder-birds," and one thing after another "sure gave them a kick." After a visit to the neighbourhood of Bond Street "to assemble a few spare parts of our wardrobe," Mr. Arnold came to the conclusion that in London, "Unless you can advertise that you deal with Royalty—whether 'late' or living doesn't matter—you might as well put up your shutters and buy a barrel organ."

There is a note of unconscious humour in the Foreword by the Fliers. After a list of people who helped the expedition, or what the late Sir Walter Raleigh called "Tombstones that are read by none but the corpse," they say:—"Last and chief of those to whom we would offer our gratitude and love are our mothers who sent us away with a smile and welcomed us home with tears." One of those things which might have been expressed differently.—C. M. MCA. and A. L. H.

THE RONALD AERONAUTIC LIBRARY.

["Aerostatics." By E. P. Warner. 112 pp. Price \$3.25 net. "Free and Captive Balloons." Part I, "Free Balloons." By R. H. Upson. Part II, "Captive Balloons." By C. de F. Chandler. Part III, "Fabrics for Gas Envelopes." By C. de F. Chandler. 331 pp. Price \$5 net. "Aircraft Power Plants." Part I, "Aircraft Engines." By E. T. Jones and R. Insley. Part II, "Propellers." By F. W. Caldwell. Part III, "Water Ballast Recovery." By R. F. Kohr. 208 pp. \$4.25 net.] (All published by the Ronald Press Company, New York.)

These three further volumes of the Ronald Aeronautic Library maintain the high standard of accurate and authoritative information of previous volumes.

Mr. Warner's book on Aerostatics is, according to the preface, based on the first part of a course on the theory of airship design given under his guidance at the Massachusetts Institute of Technology, and although the volume deals only with the theory and operation of balloons, a knowledge of aerostatics is of primary importance in both the design and operation of airships. The physical laws governing the behaviour of the free balloon are very clearly expressed, and the mathematical treatment is suitable for practical use.

In Part I of the volume on Free and Captive Balloons, Mr. Ralph Upson deals with the design, construction and operation of the normal spherical balloon clearly and concisely. In the section on piloting, Mr. Upson to some small extent covers ground already covered in Mr. Warner's Aerostatics, though in regard to practical application of aerostatics to piloting the two authorities disagree in at least one point.

The second part on Captive Balloons deals very fully with the various types of modern observation balloon, giving details of design and form, and information as to their practical operation and concerning their essential auxiliaries—winches, cables, cordage and instruments—and their manufacture.

Part III deals very fully with the various types of fabric which are or have been used for balloons or gas bags, with the stresses encountered, methods of repair, and also with varnishes, dopes and cements.

It gives throughout the impression that it is written in the light of extensive knowledge, and it is certainly couched in practical and well-expressed terms.

The volume on Aircraft Power Plants is perhaps the least satisfying of the series that has yet appeared. It suffers from an attempt at undue compression. A very large amount of information on the subjects involved is actually contained in the 208 pages, but quite certainly both the engine section and the airscrew section might well have occupied separate volumes each as large as the present one.

The volume does in fact give an accurate general outline of the present state of development of aircraft power plants as a whole, with a somewhat fuller account of the airscrew and its qualities, than of the engine itself. As a practical handbook on engines, the first section is not up to the standard of previous volumes in the series, but possibly a further volume on the subject is to appear in the future.—W. H. S.

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THE NEWCASTLE PAGEANT.

The Newcastle-upon-Tyne Aero Club held its First Annual Pageant at Cramlington on September 5. The whole show was a great success. The number of spectators actually on the ground was variously estimated between 12,000 and 15,000. Sixteen machines took part in the Display, nearly all of them De Havilland Moths with Cirrus engines. Of these the majority belonged to the various clubs, but there were also some privately-owned machines. The flying was excellent throughout, and the weather was about as good as the North Country can provide.

The only defect was that there were not enough officials or police to control the crowd, with the result that thousands of people flocked onto the aerodrome to get a close view of the machines and all flying had to be stopped for nearly an hour till they were persuaded back beyond the ropes. It is suggested that at future meetings the machines should be parked close to the ropes or fencing when not flying.

The Club was lucky in the fact that on the date of the Pageant, No. 406 Fleet Fighter Flight of Fairey Flycatchers (Jaguar engines) from Leuchars happened to be paying a visit to the aerodrome, and the pilots gave an excellent exhibition of what Service aviators can do. Particularly fine flying was done by Flg. Off. C. B. Wincott, and some of the most experienced aviators who were present said that his exhibition of aerobatic flying on the Flycatcher was actually the finest they had ever seen, including all the best flying done on Camels and Snipe at various R.A.F. Pageants. His upside-down flying was noticeably good and his rolls were exceptionally slow and neat. Two Hawker Woodcocks and a Bristol Fighter, on tour, also contributed to educate the people of Northumberland in air-mindedness.

Among the civilian flyers Mr. Hubert Broad on the King's Cup Moth gave an excellent exhibition of trick flying. As there was a 30 m.p.h. wind blowing he glided down against it in his Moth and so made an absolutely vertical descent, with a stand-still landing—outdoing even the Auto-Giro and the Pterodactyl's efforts at Hendon. A very good display of aerobatics was also given by Mr. T. R. MacMillan, who only learned to fly recently at Cramlington.

After the races the prizes were presented by Lady Ridley. The results of the various events were as follows:—

THE PRESIDENT'S CUP FOR PILOT INSTRUCTORS.—1, J. D. Parkinson, Newcastle Club; 2, F. G. M. Sparkes, London Club; 3, A. M. West, Yorkshire Club.

THE PRIVATE OWNERS' HANDICAP.—1, A. N. Kingwill; 2, H. S. Broad; 3, J. D. Parkinson.

THE INTER-CLUB RELAY RACE.—1, Yorkshire (A. M. West, E. B. Fielden, and R. Kenworthy); 2, Newcastle (J. D. Parkinson, W. Baxter Ellis, and N. S. Todd); 3, London (F. G. M. Sparkes, R. Malcolm, and E. D. Moss).

THE INTER-CLUB MEMBERS' SCRATCH RACE.—1, Dr. H. L. B. Dixon (Newcastle); 2, R. Malcolm (London).

BOMB DROPPING.—1, J. D. Parkinson (Newcastle); 2, A. M. West (Yorkshire).

Those old and inveterate rivals, Messrs. Sparkes and Parkinson, again met in the Instructors' Race, and again Mr. Parkinson won by fractions of a second. These two are probably the best pilot-instructors and Moth pilots in this country, which is to say in the World, and their continual rivalry must do a great deal to raise and maintain the standard of flying among Club members.

Among the new pilots, Dr. H. L. B. Dixon, of Newcastle, who has only done some five hours of solo flying, discovered himself as a racing pilot of the first class. His judgment of distance, his cornering, and his handling of his machine were excellent.

Altogether the Newcastle Club deserves to be highly congratulated on its first effort, and it is to be hoped that the Club will hold further meetings, even if on a smaller scale, at an early date.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Sept. 5.

The total flying time was 29 hrs. 30 mins.

The following members had flying instruction:—Lady Bailey, K. V. Wright, Miss O'Brien, E. C. Bonner, J. H. H. Luxton, R. L. Port way, G. Black, A. R. Ogston, D. P. H. Esler, J. C. Parkinson, E. K. Blyth, G. F. Clair, B. B. Tucker, T. W. Eady, C. H. Tutt, Col. Farfan, R. A. St. John, M. P. Susman, H. R. Presland, H. Solomon, A. J. Richardson, G. Lyon, H. F. Wight.

The following members flew solo:—N. J. Hulbert, A. R. Ogston, N. Jones, Major Beaumont, G. H. Craig, O. J. Tapper, Miss O'Brien, M. L. Bramson, L. J. C. Mitchell, E. S. Brough, W. Hay, E. K. Blyth, A. H. M. Lees, B. B. Tucker, H. Petre, R. Malcolm, E. D. Moss, E. L. O. Baddeley.

A. Aitkenhead had a joy-ride. The following have passed the tests for their Aviators' Certificates:—S. O. Bradshaw, O. J. Tapper, A. Lees.

The flying time during the month of August was 149 hrs. 25 mins. This was made up as follows:—Test flying 8 hrs. 20 mins. Joy-rides 6 hrs. 45 mins. Solo flying by members 46 hrs. 50 mins. Dual instruction 76 hrs. 40 mins. Instructors' time at Bournemouth 10 hrs. 50 mins.

The Lancashire Aero Club.

Report for week ending Sept. 5.

Total time flown during the week 33 hrs.

The weather has again been bad. On two days out of the six flying has been impossible. Machines in use LV and MQ (Moths) and OK (Renault Avro).

Mr. Stack gave instruction to:—Messrs. Costa 4 hrs. 40 mins., Nelson 1 hr. 45 mins., Gattrell 1 hr. 35 mins., Leigh 1 hr. 25 mins., Honeyball 1 hr. 20 mins., Moss 1 hr. 20 mins., Newton 1 hr. 15 mins., Gerrard 45 mins., Wade 45 mins., Mrs. Marck 40 mins., Benson 30 mins., Bert 30 mins., Goodyear 15 mins., Agar 15 mins. Total 17 hrs.

Mr. Cantrill gave instruction to:—Messrs. Newton 30 mins., Goodyear 25 mins., Agar 15 mins., Bert 15 mins. Total 1 hr. 25 mins.

Mr. Scholes gave instruction to:—Messrs. Fray 35 mins., Bert 35 mins., Barker 25 mins., Crabtree 15 mins. Total 1 hr. 55 mins.

The following made solo flights:—Messrs. Goodfellow 2 hrs. 15 mins., Leeming 1 hr. 50 mins., Pitman 1 hr. 30 mins., Agar 1 hr. 25 mins., Michelson 1 hr. 15 mins., Marsland 35 mins., Parker 35 mins., Williams 35 mins., Goodyear 20 mins., Crabtree 15 mins. Total solos 10 hrs. 35 mins.

The following had joy-rides with Messrs. Goodfellow and Leeming:—Mrs. R. Williams 25 mins., D. Agar 20 mins., F. Honeyball 20 mins., Mrs. Cheglard 15 mins., Mrs. Hollinsworth 10 mins., F. Scholes 10 mins.

Mr. Marsland made his first solo this week. He had previously flown in 1919, but except for a brief course of "dual" had not been in the air for seven years.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Sept. 5 (less racing flying).

Total flying time 31 hrs. 10 mins. Dual 22 hrs. 25 mins. Solo 7 hrs. 45 mins. Tests 30 mins. Passenger flights 30 mins.

Details will be forwarded later, it has not been possible to complete the report, owing to the Flying Meeting, in time to post.

The Club's First Flying Meeting was a complete success in every way. A report of the meeting appears on this page.

The Hampshire Aeroplane Club.

Report for week ending Sept. 2.

Total flying time 17 hrs. 41 mins. Instruction flying 16 hrs. 16 mins. Passenger flying 1 hr. 10 mins. Solo flying 15 mins.

The following members had instruction:—Miss Home 1 hr. 22 mins., Major Jenkins 1 hr. 15 mins., Lt. Traill, R.N., 52 mins., Lt. Graham, R.N., 10 mins., Wing Cdr. Wyllie 20 mins., Messrs. Simmonds 2 hrs. 5 mins., Dobson 1 hr. 40 mins., Bishop 1 hr. 15 mins., Kerry 40 mins., Nicholson 40 mins., Heathcote 40 mins., Fry 50 mins., Stokes 45 mins., Perfect 35 mins., Dickson 30 mins., Bound 25 mins., Keeping 25 mins., Everett 20 mins., Fowler 15 mins., Mansbridge 15 mins., Shepherd 12 mins., Courtney 10 mins., Henderson 10 mins.

The following members had passenger flights:—Mrs. Sanderson, Miss Jowett, Dr. Jowett, Professor J. O. Thomson.

On Wednesday, Sept. 1, two members flew solo, namely Mr. O. E. Simmonds, Chairman of Committee, and Flg. Off. Clarkson.

Will members please note that in future the Club will be closed on Mondays from 1 p.m. until Tuesday 11 a.m.



AT THE NEWCASTLE PAGEANT.—A string of the ubiquitous De Havilland Moths (Cirrus engines) on the Cramlington Aerodrome.

KING'S CUP AIR RACE

Won on

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by De Havilland (Moth) 27/60 h.p.
"Cirrus" engine, piloted by Capt.
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BENTLEY RECORD
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PRATTS

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TROPHY
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PRATTS

Won on *Pratts* at the Leeds Aerial
Pageant by Mr. J. Parkinson, flying
a D.H. Moth (27/60 h.p. Cirrus
engine), entered by the Newcastle
Aero Club, in the Pilot Instructors'
Race for the York Aero Challenge
Cup.

Pratts--Best on Test

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 29; Tuesday, 27; Wednesday, 19; Thursday, 11; Friday, 6; Saturday, 26; Sunday, 14.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 58, passengers 565, freight 18 tons.

AIR UNION:

Paris—London: Machines 32, passengers 139, freight 10 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 16, passengers 81, freight 3 tons.

SABENA:

Brussels—London: Machines 9, passengers 35.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 3, passengers 12.

PRIVATE:

Machines 8, passengers 12.

Total number of trips by British Machines, 66, carrying 577 passengers. Foreign Machines, 60, carrying 267 passengers.

Comparative Figures:

Week ending Sept. 5:

Machines, 126; Passengers, 844; Crews, 158; Total personnel, 1,002.

Corresponding week, 1925:

Machines, 154; Passengers, 794; Crews, 221; Total personnel, 1,015.

Corresponding week, 1924:

Machines, 145; Passengers, 684; Crews, 177; Total personnel, 861.

Corresponding week, 1923:

Machines, 139; Passengers, 636; Crews, 222; Total personnel, 858.

Corresponding week, 1922:

Machines, 135; Passengers, 433; Crews, 245; Total personnel, 678.

Corresponding week, 1921:

Machines, 104; Passengers, 356; Crews, 127; Total personnel, 483.

Corresponding week, 1920:

Machines, 129; Passengers, 285; Crews, 154; Total personnel, 439.

Croydon Notes.

Last week one became involved in the difficult task of finding out who was the first pilot to fly on the regular cross-Channel services. The honour for this undoubtedly goes to Mr. "Bill" Lawford (should he now be called Mr. "Billériot" Lawford?), who at 09.30 hrs. on Aug. 25, 1919, left Hounslow on a D.H.4a for Paris. The machine was brought back the same day by Mr. C. R. MacMullin (now in America), who thus has the honour of having been the first to fly from France to England on the regular service.

It may be remembered that in connection with the Peace Celebrations (how premature we were) the Air Ministry by arrangement with the French permitted a special service to be run between London and Paris from July 19, a month before the regular service began.

The first machine on this service was taken across by Mr. Jerry Shaw, who thus secured the honour of piloting the first post-war commercial machine to fly from London to Paris.

One rather imagines that the first pilot ever to take a paying passenger between London and Paris must have been either Mr. Gustav Hamel or Mr. H. J. D. Astley, with Miss Trehawke-Davies as passenger in those far-off days before the War. All three are now dead.

The Armstrong-Whitworth Argosy continues to do good service. The Jaguar engines seem quite to have been cured of their troubles and both on the Argosy and the Hampstead are running extremely well.

Croydon still awaits the other Argosy, which has been languishing at Martlesham since the beginning of July. It really seems too absurd that tests of machine urgently required should still be uncompleted after two months. It seems as though either the Martlesham system or the Martlesham staff wants changing.

These delays at Martlesham have long been a scandal far worse than the little matters which are always being seized on by the daily press as the basis for an attack on the Air Ministry.

Mr. Leslie Hamilton and his Viking have now joined the Lowenstein Air Line.

It is understood that K.L.M. are shortly to use three-engined Fokkers on their service. Pilots of the R.A.F. who have flown the sample bought by the Air Ministry speak very highly of it. In current R.A.F. slang it is a "wizard-kite" and its only defect seems to be that owing to the small amount of wing incidence when its tail-skid is on the ground it runs for a long way when landed. Possibly this could be got over by fitting brakes to the wheels.

On Monday Herr Kraute brought the new "sleeping-car" Albatros biplane over from Berlin. This is being used experimentally on the Moscow—Königsberg night service.

For the first time this season the air lines have been seriously affected by the weather. On Wednesday and Thursday there was dislocation on account of heavy and continuous rain, low clouds and fog, and on Friday all services were cancelled owing to dense Channel fog. What about all these gadgets one reads about daily which makes flying in fog quite certain and safe? Surely they are advanced enough to make it safe to fly over 25 or 30 miles of mist.

Mr. Dudley Travers and his red D.H.9 have been at work again this week. On Sunday he took two passengers to Paris for the day, starting at 07.10 hrs. He left Paris at 18.02 hrs., but was forced down at Tonbridge by bad weather and darkness.

One of the passengers was Mr. Worter, who had to get to Paris to break a motor-cycle record and be back by bedtime. He did it in spite of forced landings.

The French have recently made Cherbourg a prohibited area. This comes very hard on the "pirate pilots" such as Messrs. Travers, Hamilton, and Hope, as there was quite a nice little business to be done in picking up those who had missed the "Tics" and "Tanias" at Southampton and rushing them to Cherbourg. This irritating regulation seems quite unnecessary and it seems to be a case for the tactful intervention of Sir Sefton Brancker—G. D.

[Seeing that forts and fortresses are simply silly in these days, Cherbourg can only have been made a prohibited area in order to be vexatious to British Aviation. It would serve the French right if the country round Dover, Hawkinge, Hythe, Biggin Hill and Kenley—all of real importance in war—were made prohibited areas to French aircraft. Then the French machines would have to make a long Channel crossing from their beloved Cherbourg or thereabouts and we might have a few more *ammerissages* by French aeroplanes—which would stop their laughing on Sundays for a while.—C. G. G.]

SEAGULLS ON THE REEF.

Three Supermarine Seagull amphibians (450 h.p. Napier Lion engines) are at present engaged on a survey of the Great Barrier Reef, which runs along the North-east coast of Australia. They flew from Melbourne and arrived at Port Macquarie on Aug. 24. To these seagulls the reef is no barrier.

A SURVEY OF THE PROVINCE OF QUEBEC.

Arrangements are being made by the Quebec Provincial Government to complete an aerial map of the entire province, including lands, forests, waterways, and seaboard lines.

The first section of this undertaking will cover the entire Gaspé peninsula, and this has already been begun.

It is expected that it will take about ten years to complete the survey.

MOSCOW—PARIS—MOSCOW.

On Aug. 31 a Russian aeroplane arrived at Le Bourget aerodrome from Moscow, having flown via Königsberg and Berlin.

On the following day it left Paris at 06.25 hours and arrived back in Moscow the same evening.

The machine was a Russian copy of the de Havilland 90 fitted with a 450 h.p. Napier Lion engine. It was piloted by M. Gramoff and carried one mechanic as passenger.

ACROSS THE ANDES.

On Sept. 3 Lieut. Doolittle, U.S. Air Corps, who has been released on six months' leave of absence to demonstrate the Curtiss P.1 pursuit-ship, in South America, arrived in Santiago, Chile, after having crossed the Andes mountains from Buenos Aires in a non-stop flight of 7 hours 37 mins.

ROUND SOUTH AMERICA.

The United States State and War Departments are preparing to organise a flight by five U.S. Army aeroplanes round the South American Continent. The flight will probably begin in December of this year from San Antonio, Texas, and the total distance to be covered will be 16,000 miles.

Pending the receipt of permission to fly over certain South American countries the itinerary of the flight is undecided.

The object of the flight, apart from military training, is to advertise American aircraft.

A FATAL ACCIDENT.

A fatal accident occurred on Sept. 2, near Great Bookham, in which Mr. R. H. Leavey, Mr. A. Keene, and Mrs. Stallard lost their lives.

The machine was of Avro 504K type and belonged to Mr. Peck, trading as the Southern Counties Aviation Co., of Brooklands. It was on its way to the Crystal Palace, over which stunt flying has been done on Thursdays of late.

When at Great Bookham the pilot was evidently forced to land by bad weather and the accident happened in the process of landing. A stall was apparently followed by a nose-dive, and the machine burst into flames. The mechanic, Mr. Keene, managed to crawl out, but he died shortly afterwards.

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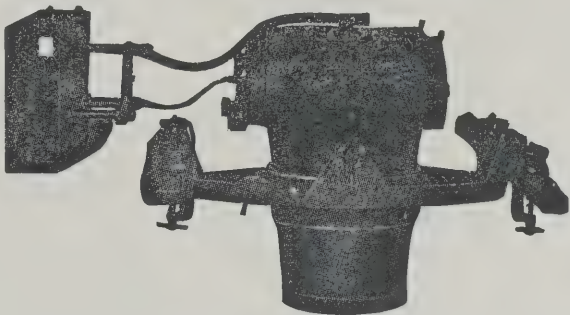
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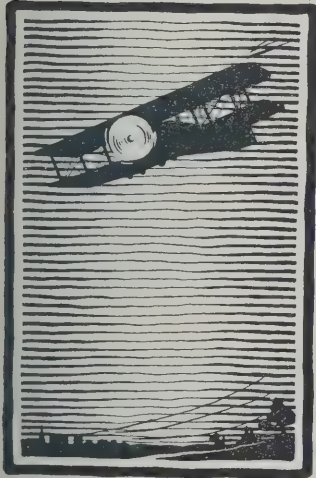
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4 machines completed flight Cairo—Cape—England a distance of 14,000 miles to Schedule

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2 machines completed round flight to Egypt and Cyprus a distance of 7,000 miles to Schedule.

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Winner of German Seaplane tests, the only machine to go through these strenuous contests without repair or penalisation.

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THE NEW AIR MAIL.

The Postmaster-General draws attention to the opportunity which the recently established Friday morning Air Mail from London to Marseilles offers of overtaking at Marseilles or Toulon the mails for India, Egypt, Iraq, Aden, East Africa, and, in most weeks, Australia, despatched from this country on the previous evening by the ordinary route. The new Air Mail has, so far, made regular connection with the Peninsular and Oriental or Orient Packet at Marseilles or Toulon.

Fuller particulars of the new service are given in the Air Mail leaflet, a copy of which can be obtained free at any Head or Branch Post Office, and the latest time of posting for this mail can be ascertained at the local Head Post Office.

TITANINE.

It is of interest to learn that a number of machines which are taking part in the Lympne trials are doped with Titanine. These include the Blackburn Bluebird, the Avro Avian and Avis, the Parnall Pixie, the A.N.E.C. Missel-thrush, the De Havilland Moth, the R.A.E. Club Sirocco, and the Westland Woodpigeon.

Titanine, always well to the fore in competition, seems to be keeping up its reputation well.

THE GERMAN SEAPLANE COMPETITION.

The dope used on the Heinkel Seaplanes, which were so successful in the German Seaplane Competitions, was supplied by Cellon (Richmond) Ltd. A point of particular interest occurred during the General Strike. An additional supply of dope for the Competition machines was urgently needed. It was quite impossible to ship it from this country. Therefore the dope was supplied by the French branch of the Cellon Company.

MORTGAGES AND CHARGES.

STEEL WING CO. LTD.—Debenture dated Aug. 18, 1926, to secure a sum not exceeding £18,000, which may become payable under a guarantee to Company's bankers, charged on the Company's undertaking and property, present and future. Holders: D. J. Mooney, Eppingham, Surrey; and H. Burroughes, Sidbury Lodge, Edgware, Mdx.

PERSONAL NOTICES.

DEATHS.

LOWE.—On Sept. 1, at Netley Hospital, as the result of a flying accident, on Aug. 31, L-AC. Eric Arthur Lister Lowe, R.A.F.

PAGE.—On Aug. 31, at Marchwood, Hampshire, as the result of a flying accident, Alfred Lionel René Page, Plt. Off., No. 16 (Army Co-operation) Sqdn., R.A.F.

Mr. Page entered the R.A.F. with a S.S. comn. on Mar. 14, 1925, and was posted to No. 5 F.T.S. Sealand, for a course of flying instruction. He was appointed to No. 16 Sqdn. in February, 1926.

PEARSE.—On Sept. 2, at Hinaidi, Iraq, as the result of a flying accident on Sept. 1, L-AC. William Arthur Pearse, R.A.F.

DU PORT.—On Sept. 1, at Hinaidi, Iraq, as the result of a flying accident, William Osmond du Port, Flg. Off., No. 55 (Bombing) Sqdn., R.A.F.

Mr. du Port passed out of the R.A.F. Cadet College, Cranwell, on July 31, 1924, and was posted to No. 100 (Bombing) Sqdn. at Spittlegate. He was posted to No. 55 Sqdn. in September, 1925, and was promoted to the rank of Flg. Off. in January, 1926.

Mr. du Port played Rugby for Cranwell and was in the Cadet College Golf and Cross-country teams.

MARRIAGES.

COURTNEY—RAYSON.—On Sept. 1, Group Capt. C. L. Courtney, C.B.E., D.S.O., youngest son of W. L. Courtney, M.A., LL.D., to Mrs. Rayson, daughter of G. E. Greensill.

SIMPSON—BENSON.—On Aug. 7, in London, Sq. Ldr. J. H. Simpson, R.A.F., to Winifred Elsie, daughter of Charles Bernard and Mrs. Benson, of Dorchester.

WARNE-BROWNE—NICHOLSON.—On Aug. 28, at Holyrood Church, Stubbington, by the Rev. R. E. Leigh, late Vicar of the Parish, Flt. Lt. Thomas A. Warne-Browne, D.F.C., R.A.F., only son of Mr. and Mrs. A. Warne-Browne, of Shiplake, Oxon, to Ruth, younger daughter of Mr. and Mrs. Charles F. Nicholson, of Lee-on-Solent, Hants.

FORTHCOMING MARRIAGES.

MOORE—FARO.—The engagement is announced between Sq. Ldr. B. Fitzgerald Moore, R.A.F., Iraq, twin son of the late Walter Robert Fitzgerald Moore, M.I.M.E., M.I.C.E., Mintaro, Monegelta, Australia, and Mrs. Fitzgerald Moore, and Dorothy, elder daughter of Mr. and Mrs. R. S. N. Faro, of the Old Forge House, Canterbury.

SHAW—BILL.—The engagement is announced of Plt. Off. D. Campbell Shaw, R.A.F. (formerly Midshipman, R.N.), youngest son of Mr. and Mrs. W. Shaw, of Wolverhampton, Staffs., and Miss J. W. Bill, daughter of Mr. and Mrs. R. W. Bill, of Paignton, S. Devon.

BIRTHS.

FORROW.—On Aug. 12, at Portmore Nursing Home, Simla, India, to Betsie, wife of Flt. Lt. H. E. Forrow, R.A.F.—a son.

THORNTON.—On Sept. 3, at 76, Porchester Terrace, W.2, to Catharine (née Bartlett), wife of Capt. T. G. Thornton, M.C., D.F.C.—a daughter.

WILLIAMS.—On Aug. 30, at Marsworth, near Tring, to the wife of Sq. Ldr. G. G. A. Williams, R.A.F.—a daughter.

THE AEROPLANE—SEPT. 15. 1926.

Eliminating at Lympne.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

Vol. XXXI. No. 11.

SIXPENCE WEEKLY.

Registered at the G.P.O.
as a Newspaper.

"PRIMUS INTER PARES."

THE LIBRARY OF THE



THE FIRST MAN AWAY:—Mr. C. F. Uwins starting a minute or two after 08.00 hours in the "Daily Mail" Competition at Lympne on Sunday, September 12, on the Bristol Brownie, Bristol Cherub Engine.

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*"Flight" Photograph.*

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

SEPT. 15,
1926.

THE AEROPLANE

Incorporating
Aeronautical Engineering

VOL. XXXI.

No. 11.

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U.S.A., 1 Year, \$8 50c.

ON THE START OF THE "DAILY MAIL" COMPETITION.

ON ELIMINATING TESTS.

Of course it all depends how you look at an eliminating test in a competition of this sort. Is the idea to eliminate as many machines as possible, and so give the World the impression that British aircraft designers are a futile lot who cannot design decent aircraft, or is the idea to eliminate any aeroplanes which are a definite danger to those who fly in them and to leave in the competition all the machines which are likely to put up a good performance? That question caused more ill-feeling on the Sabbath Day, September the twelfth, 1926, and the two preceding days, than one has ever seen or heard at any competition of any sort.

Whichever way you look at it, the net result of the Eliminating Tests as held at Lympne on Friday and Saturday, Sept. 10 and 11, was to produce only nine starters out of sixteen entries in the actual Competition which began on Sunday the 12th.

Of the sixteen entrants, three did not arrive at Lympne at all.

Number 5, the Royal Aircraft Establishment Aero Club's biplane, though finished in time, did not come to Lympne because when it was tested it was found that our high-browed scientists had got its Centre of Gravity something like thirty inches out of place. Two-and-a-half feet of error in a machine twenty-one feet long is a pretty high percentage. It may help to explain one's distrust of pure science, for one has watched mistakes of this kind happen to scientists for the last thirty years.

Number 8, the Halton Aero Club's biplane, could not be finished in time for the competition.

Number 11, the Cranwell biplane with the Pobjoy engine, though finished, was kept at home because the engine broke down during its Air Ministry type-tests. This is extraordinarily hard luck, because apparently the engine does give the power that is claimed for it and stands up to its work.

One was told that the trouble was caused by a screw working loose in a connecting-rod attachment. If it had been a left-hand screw instead of a right-hand screw it would have

worked tight. It was just one of those things that can only be learned by experience. And although the experience was dearly bought we may still hope to see the Pobjoy engine a success.

Of the thirteen machines which arrived at Lympne, the A.N.E.C. Missel-thrush eliminated itself on the Thursday. Nobody was to blame. The elimination was due entirely to a mistake in design which can easily be avoided in repairing the machine.

The axle is carried on the usual rubber ring shock-absorbers and these are anchored below the axle to a couple of horns which project to within four inches of the ground. In landing, the pilot, G. L. P. Henderson, put the machine down in his usual way, but the ground happened to be a little bit rough. The shock-absorbers allowed the axle to come up more than the spare four inches, the horns dug into the ground and the machine went straight over onto its nose, damaging itself beyond repair.

This was a very great pity because it was a singularly beautiful machine and looked as if it ought to be exceptionally efficient. Mr. Bewsher the designer had made a very good job of it and externally it was much cleaner and much better streamlined than any machine in the Competition. One only hopes that its entrant, Mr. Martin, a Director of the A.N.E.C., will not be discouraged by this mishap but will rebuild this machine and have one or two others built with more powerful engines, for one is sure that there is a market for a machine of this type.

When the eliminating tests proper, or improper, as many people considered them, began on the Friday, the Short Satellite with the A.B.C. Scorpion II was eliminated because it could not get "over the sticks" in the Getting-Off test. There was no argument about that. The Satellite is a very nice little flying machine, but she is not a weight-carrier, and one imagines that she was only entered by the Seven Club as a sporting effort.

"AND HEARD GREAT ARGUMENT."

The real arguments were over the elimination of the Black-



AN INTERESTING TEST.—The first of the Eliminating Tests at Lympne consisted in proving that the machine, having landed in a field, could be got out of it through an ordinary farm gate and into a reasonably high garage by the pilot and passenger unaided. Wings might be folded or taken off and fixed alongside. A species of "loading-gauge" was extemporised between the doors of one of the big sheds at Lympne, and here the Supermarine Sparrow (Cherub engine) is seen passing through, with her big monoplane wing strapped alongside. Some readers will recognise in the picture two members of the staff of "The Aeroplane," hard at work as usual.

burn Bluebird (Armstrong-Siddeley Genet) and the Cranwell C.L.A.4 with the Bristol Cherub. And there was also a lot of argument over the penalty inflicted by the Stewards on the Seven Aeroplane Club's Westland Woodpigeon with the A.B.C. Scorpion II. These are the instances which deserve to be discussed.

So strong was the feeling against the injustice of disqualifying these machines that all the other competitors who had already passed their tests sent in a round-robin to the Stewards asking them to allow the disqualified machines to compete. But the Stewards, in their righteousness, refused to reverse their decision. Thereafter a General Strike of competitors was suggested. And it would possibly have been organised successfully, but that it would have been following the bad example of the coal-workers and Mr. Cook.

The Stewards of the Meeting are Sir Frank McClean, who is one of the earliest pioneers of British Aviation and was definitely the Father of Naval Aviation, Captain Charles Wilson, who was in charge of the British Team which went to America last year to attempt to capture the Schneider Trophy, and Major R. H. Mayo, of the Aircraft Operating Company Ltd. All three have been pilots though none of them have flown quite recently.

Sir Frank McClean and Captain Wilson have no financial interest whatever in the Aircraft Industry. Major Mayo's interests are entirely in the direction of making the best possible showing for British aircraft, in that he depends on aircraft which operate successfully. One's only possible reason, and it is entirely personal, for doubting his judgment in any way, is that he is inclined to be a scientist.

All three are very well liked and respected. Therefore, in disagreeing absolutely from their decisions in relation to these three machines, one ascribes what one regards as their errors of judgment entirely to the fact that rigid rectitude and uncompromising conscientiousness may quite easily become a vice.

THE BLACKBURN AFFAIR.

The argument over the Blackburn was this. In doing his test landing over the sticks, with full competition load as required by the rules, Sq. Ldr. Longton came down rather heavily and bent the axle of the landing wheels. This pulled in the legs of the undercarriage a little and bent a lug which attaches one of the legs to the fuselage, slacking off the undercarriage wires.

The entrants, the Blackburn Company, applied for permission to fit a new lug. This permission was refused by the Stewards. But in virtue of their power to permit minor repairs they said that the competitors might bend the lug straight and refit the undercarriage.

Now to bend a lug straight is definitely to decrease its strength and probably to make it dangerous. So Mr. Thornton, the able young designer of the machine, asked permission to fit a washer and an auxiliary wiring plate so as to take the strain of the wiring off the lug. This permission was flatly refused on the grounds that the fitting of such a plate would make the structure of the machine different from what it was

when presented for acceptance at 10 o'clock that morning, which was the opening hour,—not the opening hour of the Competition, be it noted, but the opening hour for the acceptance by the officials of the Royal Aero Club of the machines for the Eliminating Test.

Supplementary Regulation No. 1 states quite definitely in paragraph 18 that "The Competition will be over course totalling approximately 2,000 miles." Therefore the Eliminating Tests were not part of the Competition.

Now, if the idea of the Eliminating Tests was to wash out every machine which was not fit at ten o'clock on Friday morning to start in the Competition which began at eight o'clock on Sunday morning then perhaps the Stewards were right. But one's own view is that these tests were intended merely to eliminate machines which were either definitely dangerous to fly or could not safely carry the loads with which they attempted the get-off and landing tests.

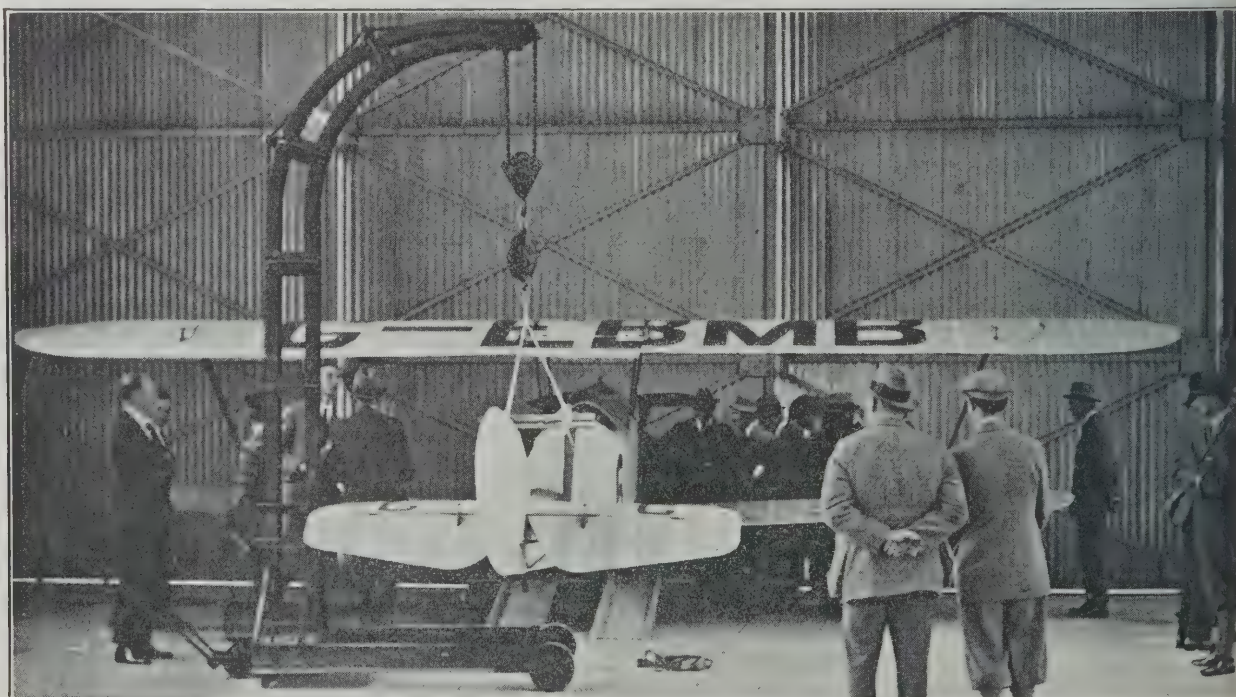
If a machine sustained slight damage through trying to get off or trying to land with too heavy a load on the Friday or Saturday, its owner ought to have been allowed to make the necessary repairs and put it through the tests again with a lighter load. Machines which failed to pass with a heavy load were definitely permitted to try again with a lighter load. And all that happened in the case of the Bluebird was that it did damage itself slightly in this way and would have done all right with a lighter load.

The request to be allowed to fit a wiring plate was merely to assure the safety of the pilot and passenger. To refuse such permission, or to refuse permission to fit a new lug in place of the bent one, was as unreasonable as it would have been to refuse permission to fit a new tube if a tyre had burst in landing. But to suggest bending the damaged lug straight was to encourage the use of a dangerous fitting, so the machine was eliminated.

Competitors are definitely allowed by the regulations to fit new airscrews (provided they are of the same type as the original one) or new tail skids, and the Stewards have the power to decide what is or what is not a minor repair. The officials of the Aeronautical Inspection Department on the spot certified that the suggested repair would be air-worthy. And it was certainly not a major repair of any kind. Therefore one holds that the decision of the Stewards was absolutely wrong in this instance.

THE CRANWELL HARDSHIP.

A very similar argument arose over the Cranwell biplane. The Cranwell Club is not rich. It is composed entirely of serving officers and men and civilians under the Air Ministry. When the C.L.A.4 arrived the owners knew that there was a flaw in one of the undercarriage tubes. A spare undercarriage, presumably off the machine with the Pobjoy engine, had been sent, but it had not arrived in time to fit it before the machine was "presented" on Friday morning. When the machine was presented this flaw was indicated and the officials were told that the new undercarriage, of exactly similar type, would be ready in the course of the day.



WEIGHING IN.—The Sopwith-Sigrist Cygnet being weighed by a method which, in the opinion of one who ought to know, is apt to give a different result at each weighing.

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Sketch, 3rd Feb., 1926

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WEST

THE GATE C

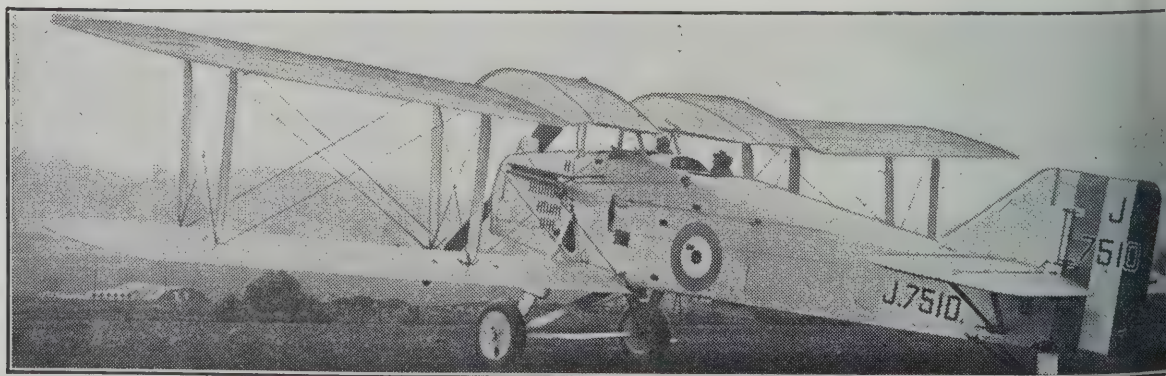
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The Yeovil Day Bomber.

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LAND THE AERIAL WEST



Westland Scaplane N.17.

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Dorset with arterial
passing through it to
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communications—a fact
was clearly shown
n the General Strike
n newspapers were
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a the Westland Aero-
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We are designers and builders of all types of Aeroplanes from the private Single-
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Our latest Military Machines are the Yeovil Day Bomber, which has been
plied to the Royal Air Force, and the Westbury, which is at present on its trials.

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Westland Works, Yeovil, Somerset.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The machine did its getting-off test, but in the landing test the flaw in the tube gave out, and the undercarriage bent, though nothing broke. The pilot taxied the machine back to the shed under her own power and the crew proceeded to fit the new undercarriage. They were then officially informed that the Stewards would not allow the machine to compete, as by fitting the new undercarriage it would be different from what it was when it was presented that morning.

Now admittedly this was not a matter of minor repair. Fitting a whole new undercarriage may reasonably be regarded as a major repair. But the new undercarriage involved no alteration in design, or even in material. It was not even as if a perfectly good undercarriage had been bent owing to a mistake in design and was to be replaced by another which might behave in the same way.

It was purely and simply a matter of pressure of time and money which prevented a flawless undercarriage from being fitted in the first place. But the Stewards refused absolutely to allow the fitting of the spare undercarriage, and so this fine sporting effort of the Cranwell Club's was eliminated simply by a rigid adherence to paper rules without allowing any consideration for the intentions of the Competition, which are to produce good British aircraft of low power.

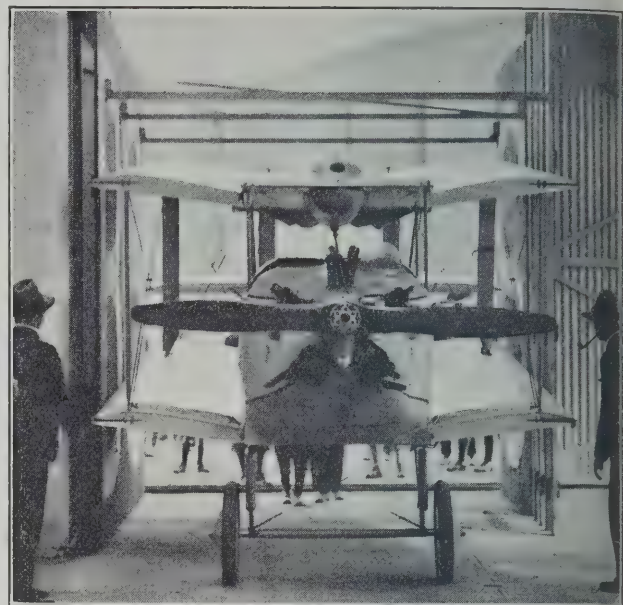
REGULATIONS RUN RIOT.

The third matter for argument was the airscrew of the Westland Woodpigeon entered by the Seven Aeroplane Club. This Club is likewise a poor club composed of R.A.F. Officers. They had entered two machines, the little Satellite monoplane presented to them by Mr. Oswald Short, and the Woodpigeon presented to them by the Westland Aircraft Works.

They had only two airscrews, a wooden one and a Fairey Reed duralumin screw. The Fairey Reed was intended as an experiment for the Satellite, but did not suit it. But on the Woodpigeon it made the machine quite flyable, whereas the wooden screw belonging to the Woodpigeon happened to suit the Satellite fairly well. So, in order to get the two machines down to Lympne, the Satellite was flown down with the wooden screw and the Woodpigeon with the metal screw.

The Woodpigeon was presented at ten o'clock on Friday with the metal screw and the officials were told at the time that this was not her own screw, but that the wooden one would be taken off the Satellite and fitted instead. No question was raised at the time, but when the machines were being brought out for the getting-off test the Seven Club were told that they must not use the wooden screw on the Woodpigeon because that was not the screw with which she had been presented, and that to fit her with her own screw would be altering the structure of the aircraft from the state in which it was when it was presented.

This again was a strict literal interpretation of the regulations. The Stewards had absolute power to permit the machine to be fitted with her own screw. It was not as if



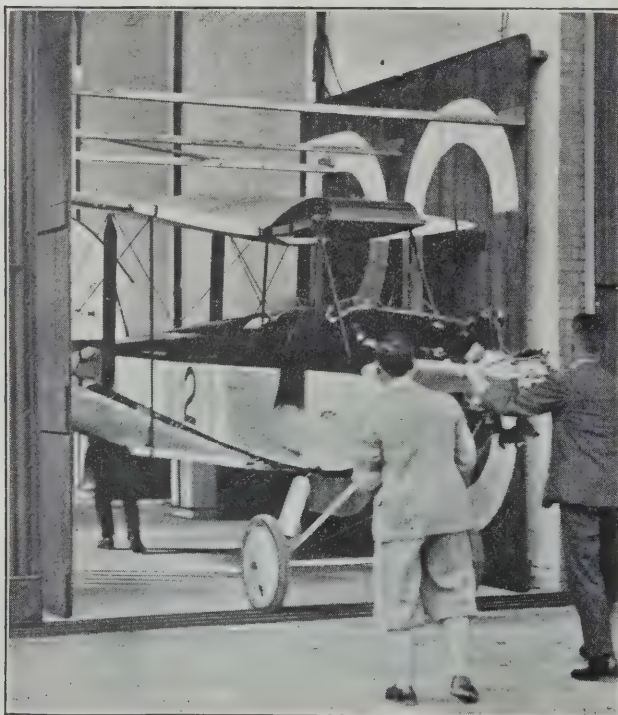
THE GATE TEST.—The Blackburn Bluebird (Genet) passing through the gauge.

she had passed certain tests with one screw and was then to be fitted with another. She had done no flying at all except to arrive at Lympne with a metal screw.

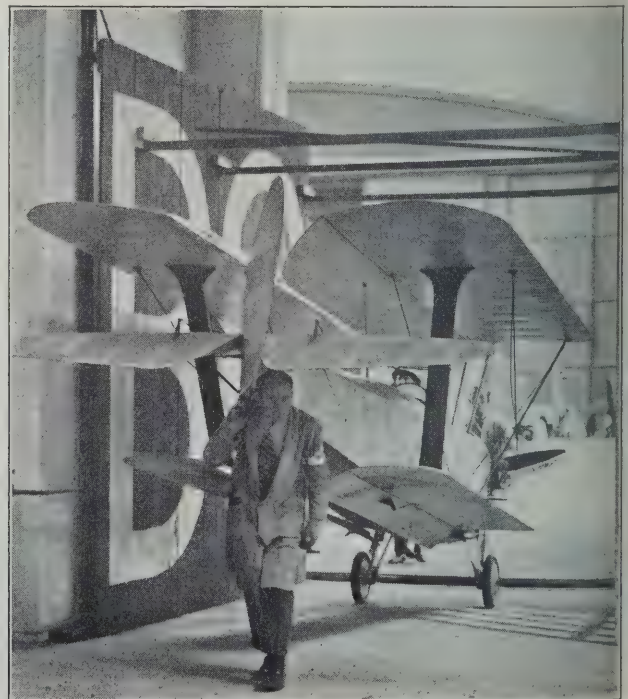
One could well understand that if a machine passed the getting-off test with a screw specially faked for climbing, the Stewards might object to her going through the Competition itself with a different screw. But that did not enter into the question. The owners merely wanted to start the tests and go right through the whole Competition with the screw which belonged to the machine.

Anyhow, after a lot of argument, the Club agreed to have a try at the getting-off test with the metal screw. The result was that the machine just scraped over the necessary height, whereas with her own screw she could have done it with half the height of the sticks to spare.

Using the metal screw in the Competition meant running the engine practically at full bore the whole way. Which meant not only over-stressing the engine but also using very much more petrol than would have been necessary with the machine's own screw. The result was that the machine was not disqualified, as were the Bluebird and the Cranwell, but she was forced to start the Competition on the Sunday morn-



THE GATE TEST.—The D.H. Moth (Genet) passing through the extemporised "Loading-Gauge."



MAN-POWER.—The Hawker Cygnet entered by the R.A.E. Club passing the gate.



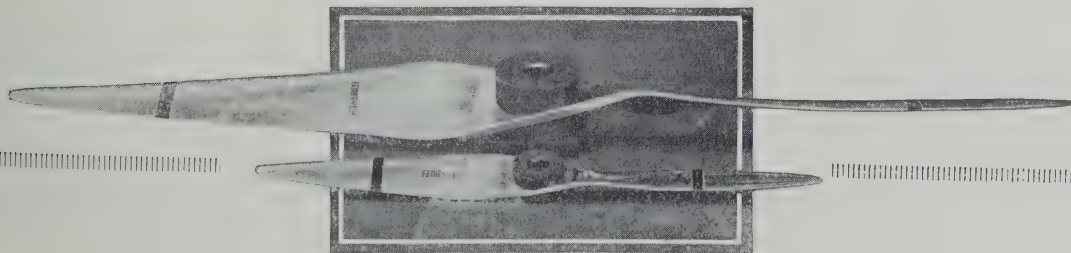
THE
LIGHT AEROPLANE COMPETITION
AT
LYMPNE

10 h - 18th September, 1926.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE AVRO CONSPIRACY.—Left to right, Mr. John Lord, Mr. Roy Chadwick, and Mr. R. J. Parrott. To the extreme right is Mr. Ellerton, now of Short Bros., and once a pillar of the Royal Aircraft Factory and the A.I.D.

ing not only with a screw which handicapped her heavily in the matter of petrol consumption, but which, because it meant running the engine too fast in the effort to keep up the necessary speed over the ground, definitely meant risking bursting the engine in the air with the consequent risk of wrecking the machine in the air or at best causing a forced landing.

So here you see that in the two cases, by sticking rigorously to the rules, or at any rate to the interpretation forced on them by the Stewards' uncompromising consciences, the Blackburn people were invited to fly a machine in a dangerous condition, and the Seven Club were practically forced to import an element of danger into the flying of their machine. Also the fine sporting efforts of the Cranwell people and of the Seven people came to nothing.

SPORT OR BUSINESS?

Somebody reproached one of the Aero Club officials, whether one of the stewards or not one does not know, with the unsporting way in which the Stewards had treated all three machines. The official replied that this was not a sporting event, it was purely a business competition promoted by *The Daily Mail*.

If that be the Royal Aero Club's view of the affair then the reply very simply is that the Club had no business to be running the Competition at all. The Club, by its constitution, has nothing whatever to do with aircraft business. It exists to promote the sport of flying. And if this is a business Competition then the Club has no right to be running it.

Either way the decisions of the Stewards in these instances are contrary to the best interests of British Aviation. If the Competition is a sporting event, then they have not acted in a sporting way by eliminating these three machines. And if the Competition is purely a business affair into which the element of sport does not enter, then, apart from interfering in business which is outside the Club's province, they have

acted in a way which is definitely detrimental to the British Aircraft Industry, by putting out of effective action three machines, two built by the Aircraft Trade and one by private enterprise, which would in all human probability have put up very good performances, and would have enhanced the reputation of British aircraft designers.

At any rate, considered as eliminating tests, these trials must be esteemed highly successful by those who wished to see machines eliminated.

WHAT THE CRITICS THOUGHT.

Naturally the criticisms which one heard from all and sundry at Lympne were severe, some of them perhaps unduly so.

As to the question of what is a major repair and what is a minor repair, one humorist remarked that if any machine did not have to be extracted from the soil of the aerodrome with a crane or carried away in a wastepaper basket in the course of the eliminating tests the owners ought to be allowed to rebuild it and have another try at the tests.

One does not agree with the saying of another critic who remarked that apparently the Stewards were out to do everybody in.

And the connoisseur who remarked at dinner that the excellent Volnay of the Grand Hotel was as soft and balmy as the Stewards' decisions may be considered guilty of an overstatement in relation to the Stewards.

If the Stewards had been consistent they would have disqualified both the Avro machines for infringing Regulation No. 11, which says that competition numbers "must be painted in black on a white surface on each side of the fuselage, and on the lower surface of each of the lower main planes." The Avros were painted in bright carrot-colour, and, as the photographs show, the black numbers are invisible under certain conditions. And several other machines had black numbers on aluminium—which is *not* white. In fact the only machine which complied accurately with the regulation was the Supermarine Sparrow.

UNFAIR CONDITIONS.

As usual there were many criticisms of the proceedings in general. Some of the competitors did their getting-off and landing test on Friday when there was very little wind. Others who failed on Friday were allowed to do the tests



PASSED FOR COMPETITION.—The Bristol Brownie, Cherub engine, packed up for the gate test.



Contractors to the BRITISH AIR MINISTRY and most FOREIGN GOVERNMENTS.
Designers and Constructors of "MARTINSYDE" Types of Aircraft.
Designers and Constructors of "CIRRUS" Aero Engines.
120/140 h.p. "AIRDISCO" Aero Engines.
300/330 h.p. "NIMBUS" Aero Engines.



A.D.C. SUCCESSES.

At Bournemouth Air Race Meeting, August 21st and 22nd, A.D.C. "CIRRUS" and "NIMBUS" Aero Engines obtained 9 WINS out of 10 EVENTS.

OTHER RECENT SUCCESSES ARE:—

1st KING'S CUP AIR RACE, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Capt. H. S. Broad.

1st AUSTRALIAN AIR DERBY, 1926.

A.D.C. "CIRRUS" engine in D.H. "Moth." Pilot: Alan J. Cobham.

A.D.C. "CIRRUS" engines have been supplied to
THE BRITISH AIR MINISTRY,
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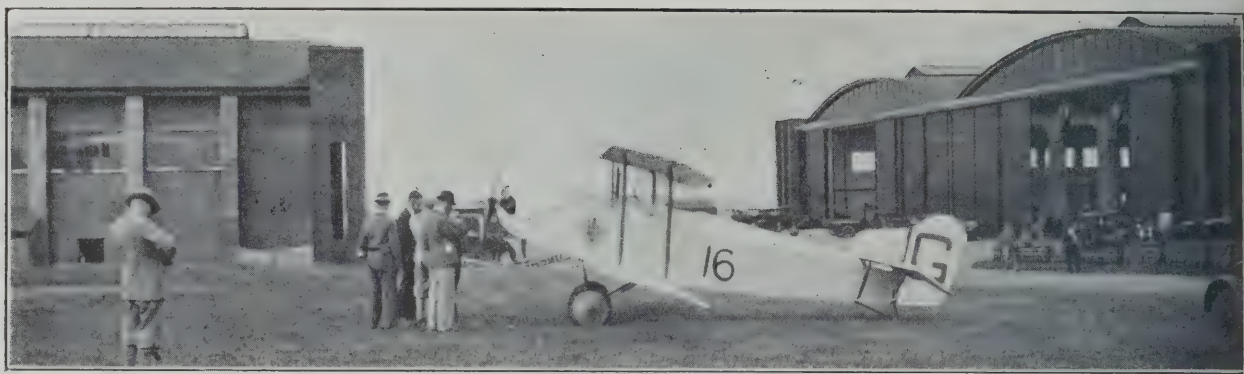
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



A MATTER FOR ARGUMENT.—The Seven Club's Westland Woodpigeon awaiting sentence by the Stewards.

on Saturday when there was a wind of anything between twenty and twenty-five miles an hour.

That meant that the machines which were tested on the Saturday were having half their weight carried by the wind before they even started and that in landing half the weight was carried by the wind as they touched the ground. There is very little doubt that under such circumstances the bump which bent the Blackburn Bluebird's undercarriage on the Friday would have been so softened that it would not have done so on the Saturday.

There was a tremendous amount of argument about the sticks over which the getting-off and landing tests were done. According to the rules the machines had to start from rest and, flying in a straight line, get over two barriers 25 feet high and 25 yards apart, the distance from the starting point and the first barrier being 300 yards.

The idea of having the barriers 25 yards apart was to ensure that the machine was really flying. If there had been a single barrier a clever pilot might have jumped his machine over it and have stalled on the other side.

The rule also said that the distance was based on a wind not exceeding six miles an hour.

Now in the first place there was no barrier. There were two poles 25 feet high stuck in the ground with flags on the top, and an official on an exalted ladder judged to his own satisfaction whether the machines actually got over an imaginary line between the flags. Of course it was difficult to judge from the ground what the official could see from the top of the ladder. But there were plenty of people who believed that some machines did not get over the imaginary line.

To make matters worse, the starting point 300 yards from the poles was away down the slope of the aerodrome, and at quite a moderate estimate 15 or 20 feet below the foot of the poles, so that actually the machines were called upon not only to climb 45 feet instead of the authorised 25 feet, but they had to get going up a hill with the wind blowing down it and so actually holding them onto the ground till they got sufficiently far clear to take advantage of the wind speed.

After sundry protests somebody discovered that according to the ordnance survey there was a drop of five feet in the contour of the hill 300 yards from the point at which the poles were fixed. Therefore as a concession the height of the poles was reduced five feet.

Anybody with half an eye could see that whoever did the contour survey certainly did not measure the contour on that particular line. Three or four hundred yards to the East of the starting point the drop in the 300 yards may have been only five feet. But the actual starting point was in a hollow

and was certainly not less than 15 feet below the foot of the pole.

However, everybody did get over the imaginary line so the only real harm done to anybody was that some machines had to reduce their useful load in order to get over the sticks, and so decreased the weight allowance which will be credited to them in the Competition itself.

A MIS-FIRE JEST.

Incidentally when the Woodpigeon was trying to get over the sticks with the metal airscrew that was never intended for her at all, and failed to do it with the full load which her owners wanted her to carry, a would-be humorist remarked that there was evidently too much wood and not enough pigeon about her. Unfortunately for the accuracy of his jest it so happened that the trouble was that she had not her own wooden airscrew.

Actually at the moment she needed more wood, though undoubtedly she would have done still better if there had been time to design and construct a proper Fairey-Reed airscrew for her. There is no possible doubt at this date that a metal airscrew properly designed for the machine and engine to which it is fitted is far more efficient than the best possible wooden screw. And at the present time there is no metal screw so efficient and reliable as the Reed.

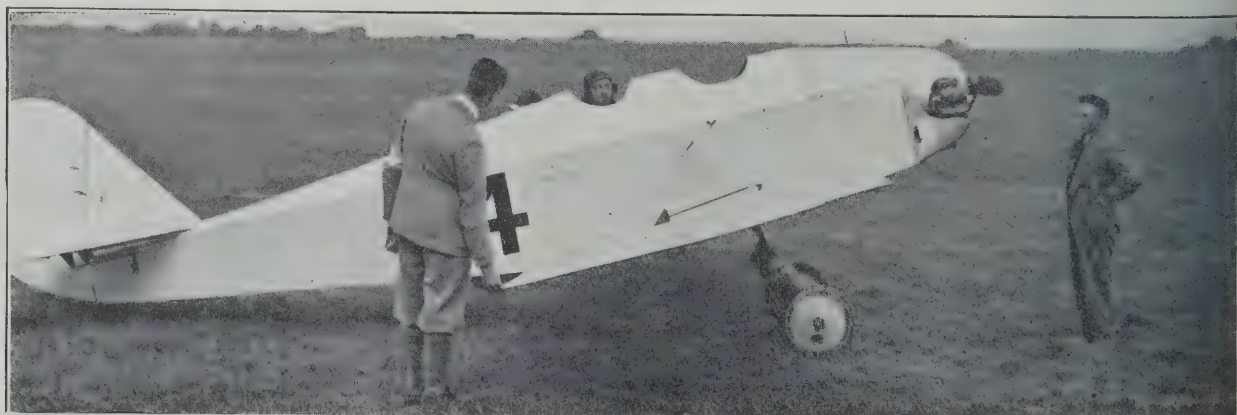
The Woodpigeon herself is a very nice job and one would like to see her tried out with bigger power and with a suitable airscrew. The Westland people deserve to be congratulated on her construction.

OFFICIAL DECISIONS.

After the big arguments with the Stewards naturally all kinds of arguments arose as to what was and what was not permissible. For example, in doing its landing test the Hawker Cygnet which was entered by Messrs. Sopwith and Sigrist broke one of the rubber rings of its shock absorbers. These rings are made of round rubber cord $\frac{3}{8}$ inch in diameter. There did not happen to be any $\frac{3}{8}$ inch rubbers about, and there was quite a lot of argument with the officials before, having decided that replacing a shock absorber was a minor repair, the officials also decided that it was permissible to replace the broken ring with one made of $\frac{1}{2}$ inch rubber.

You see, the machine having been presented on Friday morning with $\frac{3}{8}$ inch rings, it would not be the same machine if even one of the many rings were replaced by a $\frac{1}{2}$ inch ring. But of course it would have been quite permissible to have put on two $\frac{3}{8}$ inch rings, if they had been there, to replace the one ring that broke, for then no drawing-office dimensions would have been altered.

On the other hand, occasionally officials who were not Stewards ventured to give decisions on their own account.



NON-GYRATORY.—Mr. Frank Courtney in Pixie III (Cherub) about to start for a test flight on Saturday.

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For example, the De Havilland people, who are always of a labour-saving mind, asked a certain official who is notable for his inexperience of practical aviation whether they would be allowed to use a Hucks starter for their engine. The official promptly replied authoritatively that there was not the slightest objection so long as they carried it in the machine right through the Competition.

For the benefit of new and uninitiated readers one may explain that the Hucks starter is an apparatus built into the chassis of a Ford car and operated by the Ford's engine. It is driven under its own power up to the front of an aeroplane, a long arm which it carries is coupled to a dog clutch in the centre of the airscrew, and through that arm the engine of the aeroplane is turned round by the Ford engine and the apparatus disengages itself as soon as the engine in the aeroplane starts firing.

The Armstrong-Siddeley Genet engines, which evidently give every bit of the power that is claimed for them, and are exceedingly pleasing to behold and hear, are sometimes hard to start owing to the fact that to get such high efficiency the valves are set with a slight over-lap, so that at the bottom of the suction stroke there is a slight air-leak through the exhaust-port when the engine is being turned slowly by hand.

To make starting the Avian easier the Avro people wanted to use a starting magneto, such as is used in many Service machines and is carried in the cockpit of the machine, where it is wound by hand. There was considerable argument as to whether such a magneto should rightly be considered as part of the engine installation or not. If it were so considered its weight would bring the Genet engine over the 170 lbs. which is the limiting weight for the engines in the

Competition. But if it was considered as part of the aeroplane, it would merely decrease the useful load as measured for purposes of the Competition. Apparently the Stewards gave way, as the Avian was not eliminated.

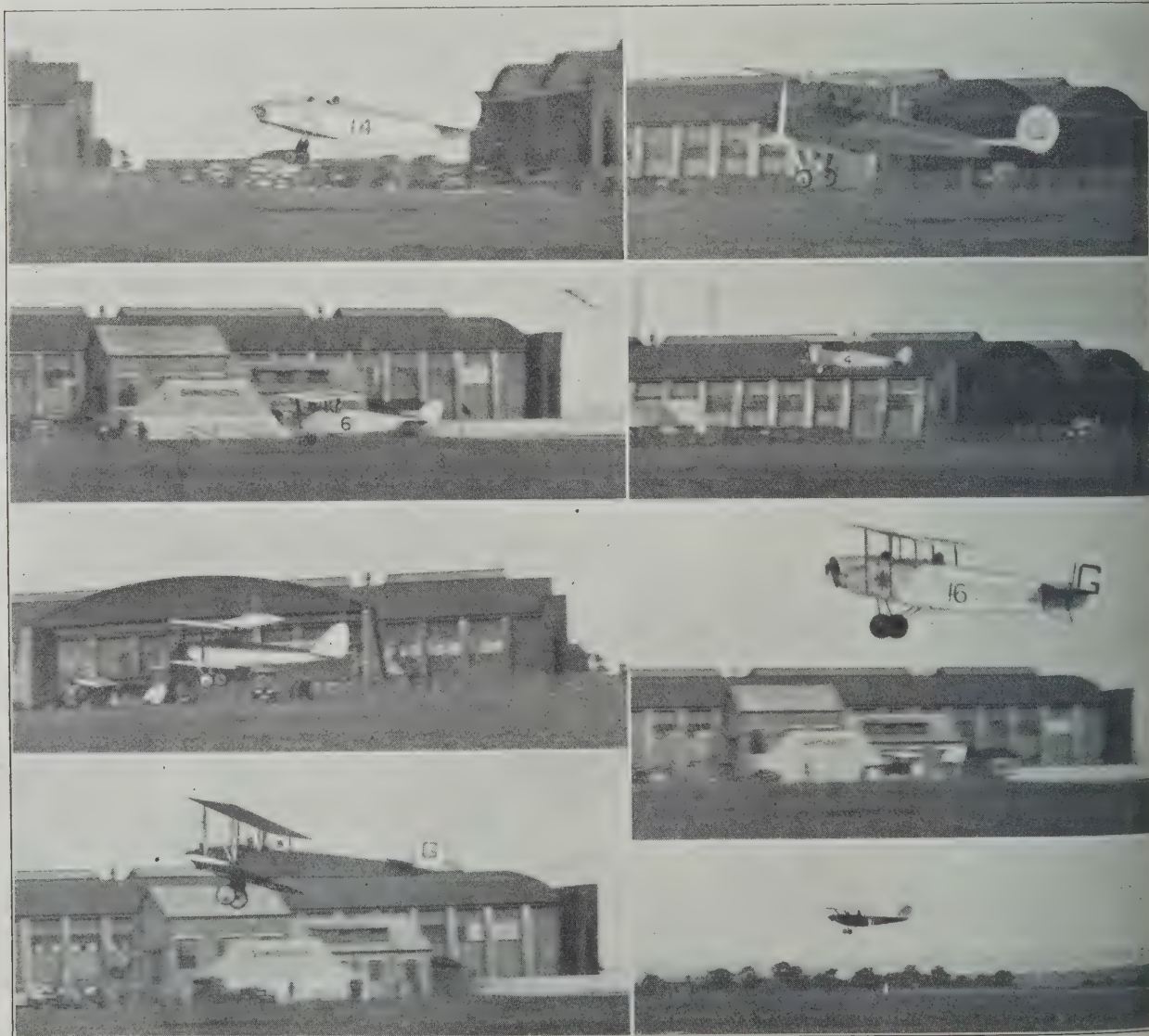
The various arguments came so fast and became so furious, that at the end of the day when flying had ceased and the volunteer St. John's Ambulance men and their ambulance were getting ready to depart after having had nothing to do all day, one suggested to them that they had better go down to the Stewards' Office, as they would probably find more bloodshed there than anywhere else on the aerodrome.

THE REAL COMPETITION.

The Competition proper opened at 08.00 hours on Sunday before a crowd of quite six people, all of whom are interested in the Aircraft Industry.

The first machine away, a minute or two after eight, was the Bristol Brownie, Cherub engine, piloted by Mr. Uwins. A few minutes afterwards Mr. Frank Courtney went away on the Parnall Pixie, also with a Cherub engine. Just after him Wing-Commander Sholto Douglas started on the Avro Avis with a Blackburne Thrush.

Then Mr. Bulman of the Hawker Company started on the Sopwith-Sigrist Cygnet. This machine is another example of Mr. Sigrist's constructional ability. Her weight empty is 420 lbs., but she carries 429 lbs. of useful load (pilot, passenger, petrol and ballast). And shortly afterwards Flight Lieut. Chick, the new skipper of the R.A.F. Rugger team, started on the R.A.B. Club's Hawker Cygnet which was presented to the Club by Messrs. Sopwith and Sigrist. The two Cygnets got off remarkably smartly.



OFF ON THE FIRST LAP.—Eight of the nine competitors leaving Lympne to cover the Lympne-Brighton course on Sunday. The first machine to leave was the Bristol Brownie (Mr. Uwins) shown on the cover. The remainder are shown above in their order of departure, reading from left to right, downwards:—Parnall Pixie (Mr. Courtney), Avro Avis (Wing Cdr. Sholto Douglas), Hawker Cygnet (Mr. Bulman), R.A.E.-Hawker Cygnet (Flt. Lt. Chick), D. H. Moth (Mr. Broad), Westland Woodpigeon (Flt. Lt. Ritchie), Avro Avian (Mr. Hinkler), and Supermarine Sparrow (Mr. Biard).

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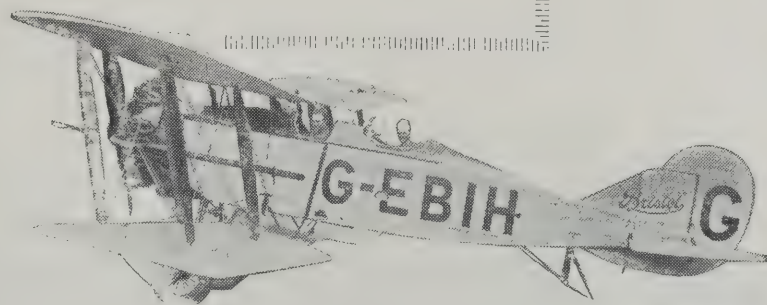
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EARLY MORNING COURAGE.—The four heroines of the start. Left to right, Mrs. Sholto Douglas, Mrs. Al Cobham, Mrs. Frank Courtney and Mrs. Roy Fedden, who courageously went up to the aerodrome to see the start at 08.00 hours on Sunday.

WEATHER.

In the course of the second lap, and some of them in the course of their first lap, the competitors met as fine a rain-storm as one has seen this year. It almost drowned the magneto of the editorial Talbot. And it speaks well for the various engines in the Competition that nobody was put out by it except Mr. Courtney.

Then there was a long wait while the De Havilland people were inducing the Genet in the Moth to start. But when it did get going there was no doubt about its power.

The seventh machine to get away was the Seven Club's Woodpigeon (Cherub engine), which was piloted by Flight Lieut. Ritchie, the Club having decided in a thoroughly sporting spirit to have a try at getting through the Competition, although, according to official views, the Competition was a purely business proposition. Their delay in starting was probably due to their having to come to a decision as to whether they would start or not.

The next away was the Avro Avian, also with a Genet, piloted by Mr. Bert Hinkler,—one has still to discover why he is called Bert considering that his Christian names are Henry James Leonard.

The Avian is really remarkable. Her weight empty is 695 lbs. and she carries 827 lbs. of useful load. Only a few years ago our most noted scientists proved to their own satisfaction that it was quite impossible for any aeroplane to carry its own weight as useful load. Yet here we have a machine which, instead of going fifty-fifty, performs with roughly 45 per cent. construction weight and 55 per cent. useful load, and it is the fastest machine in the Competition.

The last machine of all to start was the Supermarine Sparrow. As explained last week the Sparrow was only designed to test various wing curves. So she is not supposed to be a speed machine of any kind. Hence her low speed. In the few minutes between the departure of the Avian and the start of the Sparrow the wind swung clean round through 90 degrees and blew for a while from the North-West instead of the South-West. So Mr. Biard went off across the end of the sheds without crossing the official starting line, instead of flying across wind along the front of the sheds.

Then of course there was more argument as to whether he would be disqualified or not. It so happened that he struck about the worst wind of the day and turned round somewhere near Hastings as he was making practically no progress and saw that he could not possibly keep up to the fifty-mile an hour average speed over the course which is a qualifying performance. He started again later, when the wind dropped a bit, but landed at Beachy Head and retired.

After the competitors had gone somebody or another, doubtless with the best of intentions, started a gramophone concert through the loud-speakers which had been set up with the intention of notifying the crowd (if any) of the events of the day. Presumably it was the weather, but the instruments seemed to be suffering from nasal catarrh and eniclotitis simultaneously and at ten o'clock on a cold windy morning it was not at all amusing. The thing continued to perform at intervals throughout the day and interfered considerably with conversation.

He ran into a very bad patch just when he was turning at Brighton and his engine cut out, apparently through sucking solid rainwater through the carburettor intake. He landed for a while on the racecourse at Brighton and came back so late that his limiting fifty miles an hour was reduced to something below forty on the first lap of the course. According to him that made his qualifying speed a minus quantity and he had really started the day before, or words to that effect.

Then of course the question arose as to whether he ought to be disqualified because in landing on the wet course of the racecourse at Brighton he had removed the mud, clay, sand or other earthy product which was on his wheels when the machine was "presented" on the Friday morning. Apparently the officials considered that this dirt was not part of the actual structure of the machine, for he was allowed to proceed.

In starting on the second lap, owing to the change of wind, most of the machines took off across the end of the sheds and then had to circle round to cross the starting line, thus wasting quite an appreciable amount of the precious petrol on which the result of the Competition depends. Later in the day the wind came back again and dropped quite a good deal so that on the third lap most people were able to take off across the starting line again.

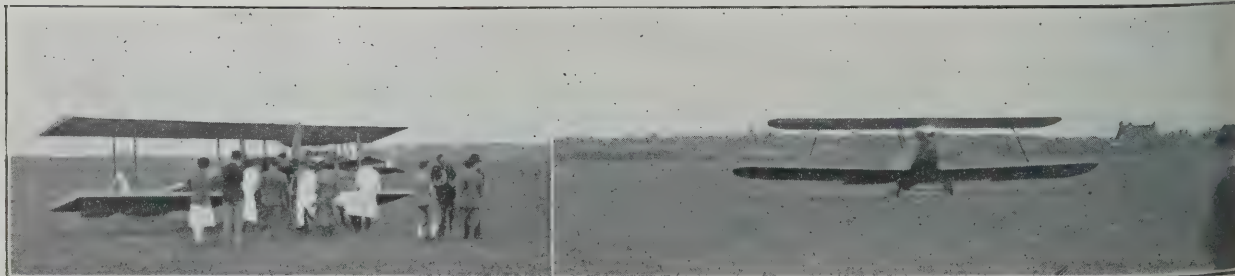
It never seemed to strike the bright officials of the Aero Club that by forcing this circular tour on those competitors who happened to strike the alteration in the wind, they were actually penalising them unfairly. There seems no good reason why the timekeeper should not have taken the times of the competitors by looking along the line of the public enclosure which was at right angles to the official starting line.

SUNDAY ENTERTAINMENT.

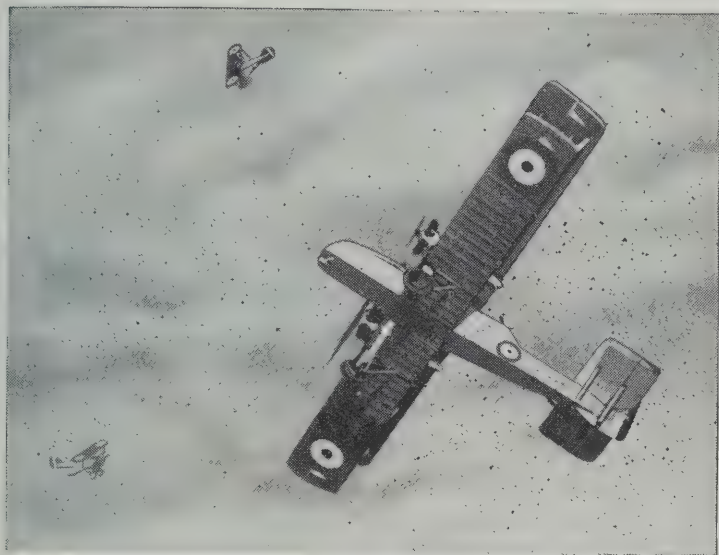
On the Sunday afternoon quite a large crowd of people were present and most of them seemed to take an intelligent interest in the proceedings.

At least one bookmaker arrived, and proceeded to make a book on the day's result. One would like to know whether a Government Aerodrome is a "place within the meaning of the Act." It is certainly not a public place. But does the fact that it is Government property make it private to the extent of legalising betting there?

Fortunately for him, it was very soon evident that the result, depending on the weight-carried-for-petrol-consumed formula, lay entirely between Mr. Bulman on the Sopwith-Sigrist Cygnet and Mr. Hinkler on the Avro Avian. In spite of the wind the Avian was averaging about 69 miles an hour, whereas the Cygnet was doing about 62. But as the Cygnet

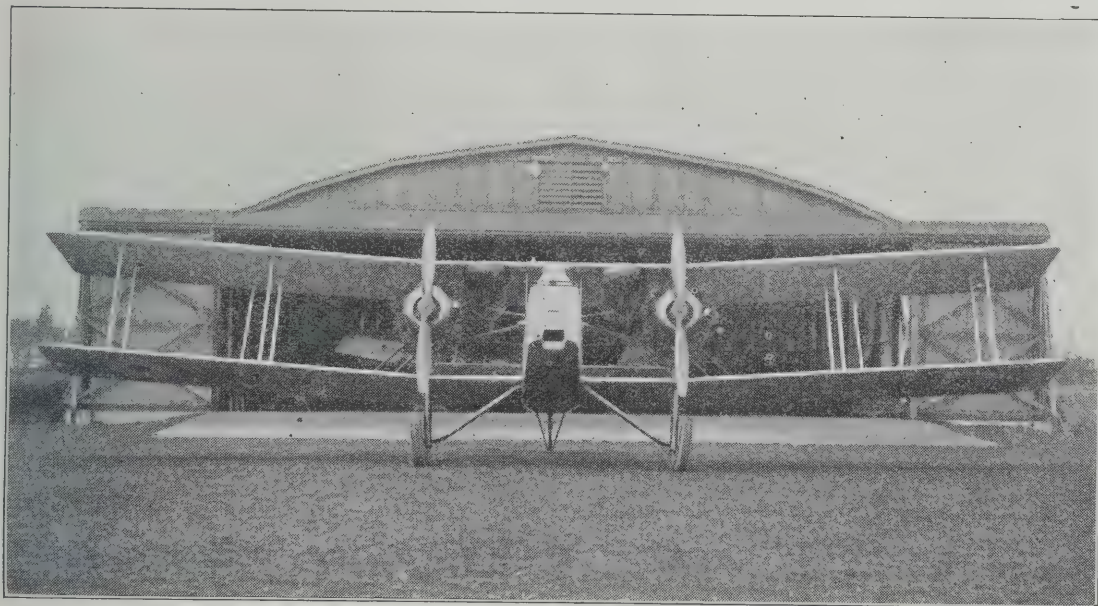


MORE MATTERS FOR ARGUMENT.—The friends of the Avian discussing her Genet engine; and the disqualified Cranwell biplane taxiing home after a demonstration of her excellence.



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ON THE WAY.—The Sopwith-Sigrist Cygnet (Cherub) and the Avro Avis (Thrush) starting on their last laps on Sunday.

only had a two-cylinder Cherub and the Avian had the five-cylinder Genet there was no doubt that the Avian was using more petrol.

At the end of his second lap, Mr. Hinkler reported that his engine had been choking and that he had to keep on throwing his throttle open wide, and, as he said, "wag-gling everything there was to waggle" to clear the choke and keep her going properly. Examination of the carburettor showed that there was an immense amount of dirt in the filters, and apparently minute particles had been getting through the filters, holding up the needle of the carburettor, and allowing it to flood. That game going on for most of the 104-mile lap must have put up his petrol consumption quite a lot.

It still remains to be discovered whether the dirt was originally in the petrol, whether it was in the filter through which the tank was filled, whether it was in the tank or whether it was in the pipe-line to the carburettor. Considering that the machine had been flown quite a lot before, one would have thought that any possible dirt anywhere would have been cleaned out.

When both the Avian and the Cygnet had finished the officials consented to measure the petrol consumptions of the two machines for the benefit of the bookmaker. But no figures were obtainable for the other machines. Consequently we must wait till next week for authentic measurements of petrol consumption.

Apart from the competitors a number of kind people came and flew to amuse the crowd.

Captain Geoffrey de Havilland, who arrived with his wife and child in the Moth which he uses for getting about the country in the ordinary way, went up and did some very pretty flying,—which personally one considers highly improper for a man of his age and responsibility.

Mr. Dudley Watt flew the ancient Sopwith Grasshopper very well indeed, after arriving with one of his typical land-

ings on the principle of "Here's an aeroplane, there's some grass, let's get down on it,"—an extraordinary method of landing which very few pilots can accomplish successfully.

Mr. C. D. Barnard of the De Havilland Company looped and rolled a Moth quite perfectly and did some beautiful falling leaf exhibitions. Mrs. Lynn flew a pale blue Moth for some time and showed conclusively that she can fly quite as well as an average man.

A young woman who has adopted the name of June descended in a parachute. One has already expressed the opinion strongly that these exhibitions should be prohibited as pandering to sensationalism, which is the last thing to be desired in connection with aviation. If one had not long since ceased to be surprised at anything which the Royal Aero Club does one would have been surprised at the exhibition being permitted.

The indefatigable G. L. P. Henderson on the old Renault-engined Avro belonging to the Surrey Flying Services took up quantities of passengers all day long. The Renault-Avro is not exactly a nimble machine in the air but it has a certain satisfying solidity about it. And as the "L" in the pilot's name stands for "Lockhart" the machine is now necessarily known as "Lockhart's Performing Elephant."

Among the visitors was Mr. Irvin whose firm, the Irving Air Chute Co. Ltd., makes the proper Service type of parachute. He arrived in his own private Moth, with an R.A.F. officer as passenger, entirely from the wrong direction, having come along the Military Canal from somewhere near Rye, in the middle of the worst rainstorm. He excused his bad direction-finding by saying that he took the wrong train at Ashford,—where the Rye and Folkestone lines fork.

Altogether, barring the hypertrophied consciences of the Stewards, and the errors habitual to Royal Aero Club Officials, and the rain and the wind, and the fact that there was only one new machine in the Competition, the opening of *The Daily Mail's* own flying week was not at all bad fun.—C. G. G.



P.S.A.—The Moth (Genet) starting on her last lap on Sunday, showing how some English folk spent a pleasant Sunday afternoon. The crowd rather resembles a Hyde Park meeting complete with rostrum.

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NOTES FROM LYMPNE.

By ALL HANDS.

Thursday, Sept. 9.

By Thursday morning the majority of machines had arrived. The only ones not there were the D.H. Moth, the Sirocco, the Halton, and the Avro Avian.

The first bit of excitement was caused by Lt.-Col. G. L. P. Henderson. He took the Missel-thrush out for test and in landing it tripped up and stood on its nose, causing sufficient damage to put it *hors de combat*. The accident was due to the design of the undercarriage, which has two prongs at the bottom which only clear the ground by four inches. These fouled a slight unevenness on the ground and caused the machine to turn on its nose. It is a great pity as the machine looked promising.

Wing Cdr. Sholto Douglas' Avro Avis was at once nicknamed the "Flying Carrot." The fuselage is painted carrot-colour and is exactly carrot-shaped.

Sq. Ldr. Longton made an extended flight on the Blackburn Bluebird, going round the old triangular course. It was expected that he would have a forced landing in his old field of 1924, but fortunately he did not.

News came through in the evening that the R.A.E. Sirocco had been tested, but that the Centre of Gravity was 29 inches too far back. It was hoped that this could be remedied.

At about 6.15 p.m. Mr. Hinkler arrived on the Avian. He had taken 1½ hrs. to come from Southampton, taking the Brighton, Eastbourne and Hastings turning points on the way. The general impression seems to be that barring accidents the Avian will win.

Mr. Broad, on the D.H. Moth with a Genet, arrived at 6.45 p.m., and before landing he put the machine through its paces. He is extremely pleased with it.

Thus 12 out of the 15 entrants had arrived and one was out of the running, leaving 11 with hopes of the arrival of the Sirocco.

One had the annual argument over the display of posters with the Secretary of the Aero Club and THE AEROPLANE very nearly did "say outright what others only think" (as the said posters say).—G. D.

Friday, Sept. 10.

At 10 a.m. was the official opening of the process of elimination. Whether it was that the Stewards of the Meeting were spurred on in their activities by the success of Col Henderson in eliminating completely on the day before that, or whether it was merely their naturally keen sense of duty, it is difficult to judge, but they started early in an effort to beat the eliminating records of 1924.

The rules of the Meeting state that all competing machines were to be presented completely erected at 10 a.m. to-day, but quite definitely suggest that the Competition—to which alone the rules forbidding replacements and repairs apply—begin with the opening of the Reliability Trials at 8.0 a.m. on Sunday. The Stewards however rapidly arrived at the conclusion that alterations carried out after 10 a.m. to-day came within the rules and might be prohibited.

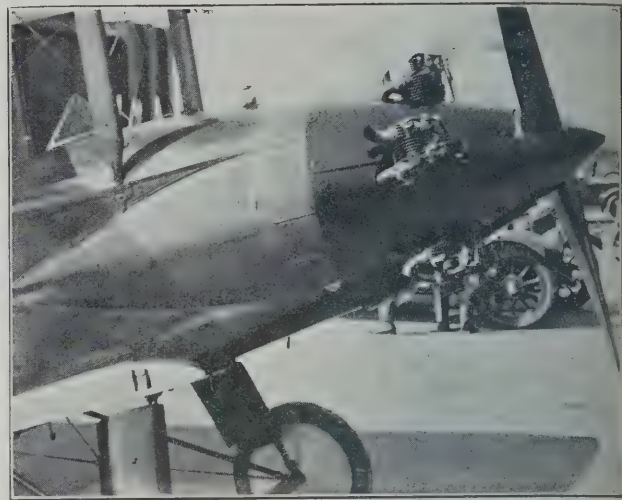
The Seven Club, for experimental purposes, had changed over airscrews on the Woodpigeon and the Satellite, and had these airscrews on the wrong machines at the appointed time. The Stewards ruled that they must not be changed back. Neither machine could get near to clearing the sticks under this ruling, but, with the correct airscrew, the Woodpigeon at least can clear them with ease. These two, therefore, on the day's word were easily washed out.

The Avro firm had ordered a Fairey-Reed airscrew for the Avian. Owing to delay on the rail it did not reach Hamble in time to fit before the machine left for Lympne, nor did it reach Lympne in time to be presented. The Avian, therefore, might not test the new airscrew and use it for the contest if it proved good. However, that decision did not secure the Avian's elimination.

A second effort to eliminate the Avian was more nearly successful. The Genet in this machine is by no means easy to start on its single magneto. A hand-starter magneto had therefore been supplied. The Stewards at first maintained that the magneto was part of the engine and must be included in the engine weight. With this addition the Genet would exceed 170 lbs., and therefore be outside the limit.

However, the concession was kindly made that if the Avian could prove that the engine would start without the auxiliary, the auxiliary could be used as an accessory and not counted as part of the engine. Thus, having a perfectly good case under the literal reading of the rules, the Stewards were ready to hedge, whereas, in regard to their previous decision, which is definitely contrary to one legitimate interpretation of these rules, they seem disposed to be adamant.

The next process conducive to elimination was that of weighing-in. Some long experience of the weighing of aircraft proves that except



A POINTED ARGUMENT.—The nose of the Avro Avian with the Armstrong-Siddeley Genet engine.

under very unusual circumstances it is extremely difficult to obtain the same result from any two attempts to weigh the same aeroplane. Thus practically all the machines were found to weigh more than their entrants had believed, and, consequently, several of the smaller-powered machines found that with the statutory minimum load of 340 lbs., they had not enough margin for fuel for the reliability trials without exceeding their permitted airworthy load.

This matter of weights is, of course, not to be accounted to the credit of the eliminating officials—the luck of the scales was with them, but not to a sufficient extent, for it was generally found possible by a little readjustment to overcome the difficulty.

The taking-off tests gave the next opportunity for carrying on the process. The wind was blowing from the sea. To take-off into the wind means climbing up the very distinct hill on the aerodrome. The sticks were fixed at the statutory 25 ft. above ground level alongside the 2s. enclosure. The starting point 300 yards back was at least another 20 ft. below ground level at the sticks, so that competitors were asked to clear an obstacle 45 ft. at least over their starting point, and to suffer the loss in acceleration of taxiing up a noticeable gradient.

Concerted protest led to a drop of 5 ft. in the level of the sticks. But even so those not eliminated have cleared 35 and not 25 ft. at the required distance and that under very disadvantageous take-off conditions. True there was a little more wind than the regulations lay down, but nothing like enough to compensate for the effects of hill-climbing.

The various measuring, weighing, and inspecting operations occupied the whole morning and continued for some considerable part of the afternoon.

Mr. Bulman on the Hawker Cygnet got through this section of the proceedings first and made the first official flight—a demonstration of dual control—at some time after noon and was followed at intervals by the other competitors. Naturally, no one failed at this.

Later, round about 4 p.m., various machines came out to attempt the get-off and pull-up tests. Mr. Bulman on the Cygnet was the first to clear the sticks, and he was followed by Mr. Courtney on Pixie III, Wing Cdr. Sholto Douglas on the Avro Avis, Mr. Broad on the Genet Moth, Sq. Ldr. Longton on the Bluebird, and Mr. Uwins on the Brownie. Messrs. Uwins and Courtney and Wing Cdr. Douglas also succeeded in the landing test, the last's landing being a particularly fine piece of piloting.

The landing test evidently worried most of the competitors considerably, for only by crossing the barrier practically stalled and more or less dropping out of the sky could the pull-up be affected. And carrying their maximum load, some of them were not anxious to test their undercarriages too far.

Flt. Lt. Comper, on the Cranwell, on his first attempt to clear the sticks, failed by some couple of feet, which was a good deal better



THE SECOND LAP.—Two snapshots of the Avro Avian (Genet).

The Sporting Seaplane

THE new Short "Mussel" Seaplane represents the latest achievement of the pioneers of British All-Metal Aircraft.

This light two-seater machine is a cheap, economical, and practical training unit, and, at the same time, should appeal to the sporting instincts of the private owner.

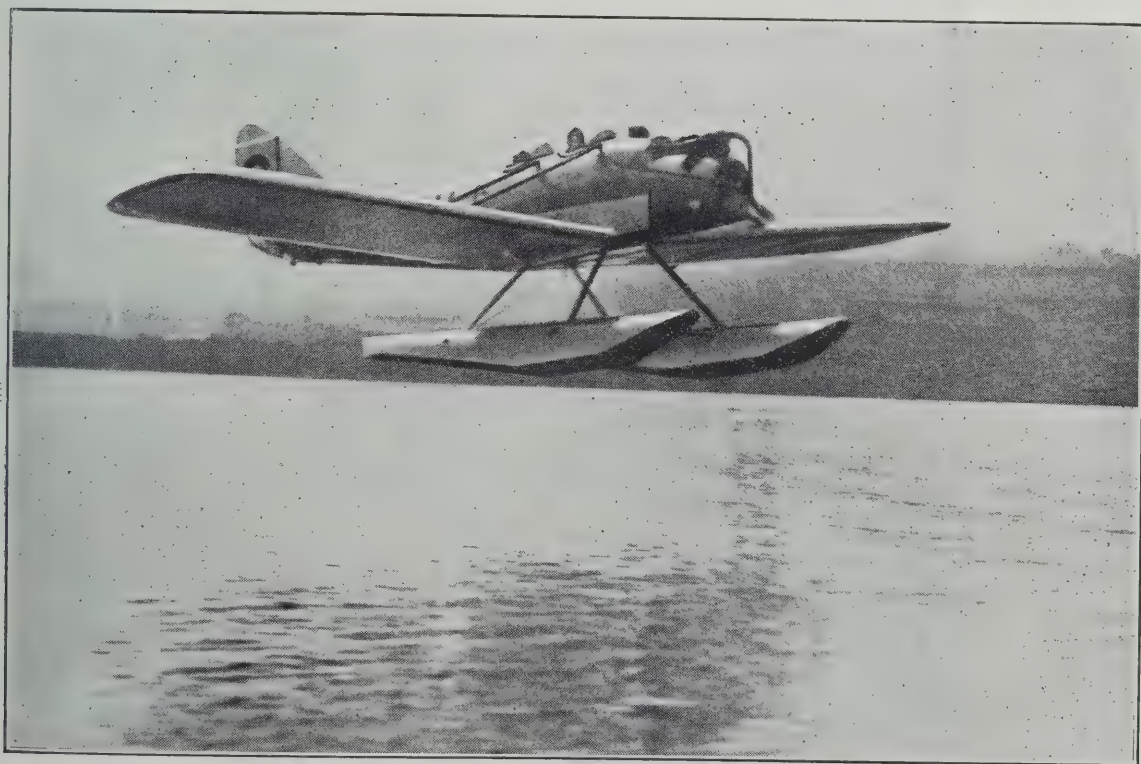
It also provides the means of development of light 'plane clubs in the coastal and inland waterway areas.

Equipped with a "Cirrus" 65 h.p. engine, and fitted with the famous Short floats constructed on the same principle as those employed by Mr. Alan Cobham on his wonderful Australian flight, the possibilities attendant upon the development of the "Mussel" Light Seaplane are unlimited.

Speed—(Sea Level) 84 miles per hour.

Landing Speed—42 miles per hour

Rate of Climb—360 feet per minute.



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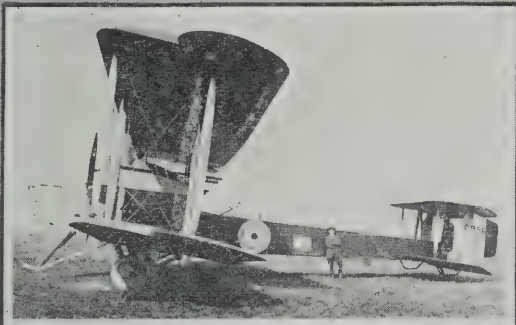
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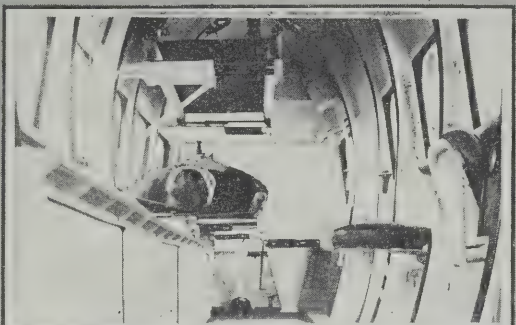


Vickers "VIMY" 4-Seater (Rolls-Royce "Eagle").

TROOP CARRIERS AND AMBULANCES.

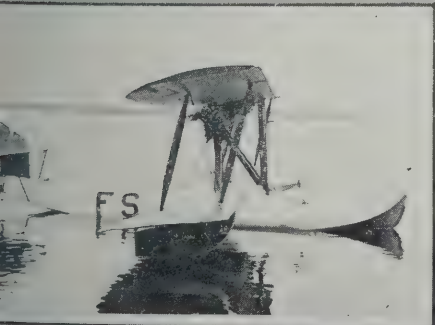


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than most first attempts. On landing, one of the Vees of his under-carriage failed at the apex of the V due to a defect in the tube. The Stewards having refused to sanction replacement, the Cranwell entry was effectively eliminated. Thus the very sporting effort of the private light aeroplane clubs at this Meeting has been very effectively squashed, the R.A.E. Club's Cygnet, presented by Messrs. Sopwith and Sigrist being the only one of their entries left.

The day closed with the passing of the Eliminating Tests by three entries which could thereafter only be eliminated by the rashness of their pilot or entrant. There is, of course, a possibility that this may occur, and all the remainder were still at the disposal of the Stewards at the end of the day.

That the Meeting will serve admirably to convince the public that the light aeroplane is totally unfit at present to attempt to cover 2,000 miles in a week seems entirely probable, and it is to the Aero Club and its officials that this result will be due.—W. H. S.

Saturday, Sept. 11.

Barring the Satellite, the Bluebird, the Cranwell C.L.A.4, and the non-arrivals, all machines entered thwarted the Stewards' thirst for elimination. Consequently, as related in the first article in THE AEROPLANE this week, nine good and hearty aeroplanes out of the original sixteen entries were entitled to start, and did so, on the Sunday morning.—C. G. C.

Sunday, Sept. 12.

Fuel consumption figures are not available except those which are unofficial, and, except in the case of Mr. Bulman on the Hawker Cygnet, unreliable. Mr. Bulman had his petrol measured, and has done his 312 miles on a bare 6 gallons—52 m.p.g. Avros have also measured theirs but do not give the figures. They admit that Mr. Bulman has beaten them on the figure of merit (the weight-to-consumption ratio), which means that they have used about twice as much—as they are carrying nearly twice the load.

Mr. Broad on the Moth is evidently using about the same as Hinkler, and the other entrants, Brownie, R.A.E. Cygnet, Pixie and Woodpigeon, used 9 to 10 gallons for the 312 miles, the Avis being about the same.

The Sopwith-Sigrist Cygnet and the Avian were so obviously the only two in the swim for the day's marks that the officials only measured them to tell the bookies who they were to pay out on, and the other figures were deduced from the various competitors' own estimates of their position.

The only official figures that can be obtained are total fuel issued—and these do not in the least show real consumptions—they are not filling up to any set level, and at least one of them has now over his airworthy load up from having taken in too much.

Mr. Bulman's competitors console themselves with the idea that his valves must burn out as he is running his petrol very weak and making his engine very hot. However, he knows most of his way about.

| No. | MACHINE. | Weight Empty | Load. | Weight Loaded | Average Speed. |
|-----|---|--------------|-------|----------------------|----------------|
| 2 | D.H. Moth (Genet) ... | 734 | 701 | 1,550 | M.P.H. 66.34 |
| 3 | Bristol Brownie (Cherub) ... | 623 | 340 | 1,000 | 54.6 |
| 4 | R.A.E. Club Cygnet (Cherub) ... | 430 | 340 | 850 | 53.3 |
| 6 | Hawker Cygnet (Cherub) ... | 420 | 429 | 900 | 61.9 |
| 7 | Supermarine Sparrow II (Cherub) ... | — | 340 | Retired in first lap | — |
| 9 | Avro Avian (Genet) ... | 695 | 827 | 1,600 | 68.76 |
| 10 | Avro Avis (Thrush) ... | 609 | 340 | 1,009 | 51.2 |
| 14 | Parnall Pixie III (Cherub) ... | 523 | 340 | 924 | 50.44 |
| 16 | Seven Club Westland Woodpigeon (Cherub) ... | 569 | 346 | 985 | 54.2 |

PERFORMANCE FIGURES:—Above are particulars of the nine starters in The Daily Mail Competition. The speed given is the average for three laps of the Lympne-Brighton-and-back course, a total distance of 312 miles. The weather was bad, including one very heavy rain-storm, and a wind which varied between 20 m.p.h. and 30 or m.r.e m.p.h., so higher speeds may well be made later in the Competition.

Monday, Sept. 13.

Monday morning was fine and clear and there was a slight South-West wind blowing.

Before the actual start Mr. Biard flew back on the Sparrow from



COMPETENT AUTHORITIES.—Mr. F. N. St. Barbe and Mr. C. C. Walker of the De Havilland Co. "and friend" at Lympne.

Beachy Head. One tyre had burst on landing and so he took the other one off to match and flew back without it.

The first of the competitors away was Mr. Bulman on the Hawker Cygnet and the other seven machines went off in quick succession. Mr. Broad had a certain amount of difficulty in starting his Genet, owing probably to the cold.

The course to-day was to Eastbourne and back to Lympne and, without landing, on to Hastings and then back again to Lympne.

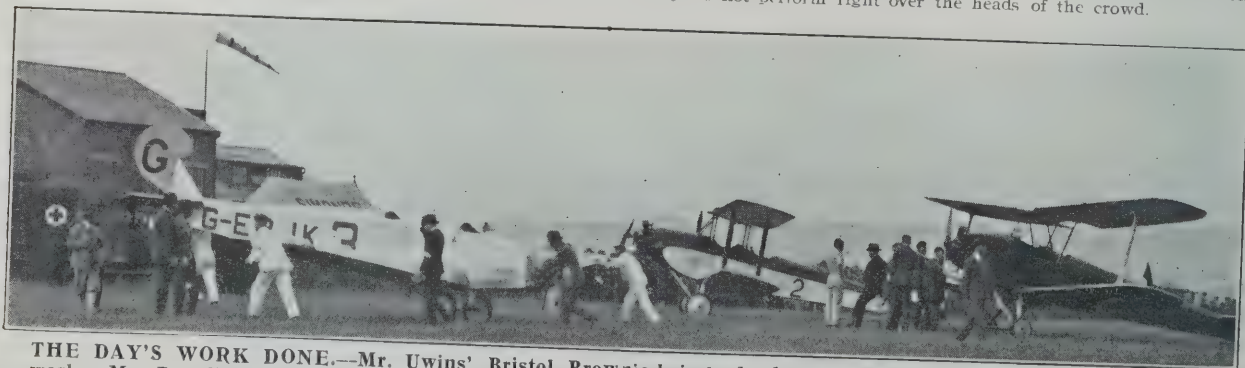
Several people had difficulty in getting over the Hastings Hills owing to the down-draught caused by the S.W. wind. Everyone agreed that the turning point at the Castle was about as dangerous as it could be.

The first casualty was a broken petrol pipe and a punctured tyre on the R.A.E. Cygnet. The Stewards ruled that the pipe could either be replaced or repaired and the Club took the latter course, and wheels may be changed at any time. The delay was very short and Mr. Ragg was in the air again in a few minutes.

Then a question arose owing to a certain amount of condensation in the intake pipe of the Avian. The Stewards here ruled that no alterations might be made. Owing to the very serious tone in which the Stewards gave their decisions it was suggested that they should be given a black cap each, or perhaps a black beret, to put on when delivering an adverse verdict.

One competitor, on coming in, said that he was afraid he was going to be disqualified because he had mistaken one of the officials for the gas works and had turned round him instead of the regulation turning point. One of the Stewards ruled that this was quite a justifiable error as it was so difficult to distinguish between the two objects concerned, especially when within hearing distance.

During the morning there was some fine exhibition flying by three Grebes from No. 25 Squadron. One wishes that pilots doing exhibition flying would remember that they can be seen so much better if they do not perform right over the heads of the crowd.



THE DAY'S WORK DONE.—Mr. Uwins' Bristol Brownie being wheeled to the sheds at the end of its first day's work. Mr. Broad's Moth and Wing Cdr. Sholto-Douglas' Avro Avis are seen on the right, ready to start on their last lap, when their pilots judged that the wind had dropped enough to improve their speed.

KING'S CUP AIR RACE

Won on

Pratts

by De Havilland (Moth) 27/60 h.p.
"Cirrus" engine, piloted by Capt.
H. S. Broad, entered by Sir Charles
Wakefield, Bart.

York Aero Challenge Cup

SUPREMACY

24 HOURS'
BRITISH BUILT
BENTLEY RECORD
made on
PRATTS
—
DUKE OF YORK'S
TROPHY
(Motor Boats)
won on
PRATTS

Won on *Pratts* at the Leeds Aerial
Pageant by Mr. J. Parkinson, flying
a D.H. Moth (27/60 h.p. Cirrus
engine), entered by the Newcastle
Aero Club, in the Pilot Instructors'
Race for the York Aero Challenge
Cup.

Pratts—Best on Test

Wing Cdr. Sholto Douglas was a victim of the day. When on his second circuit on the way to Hastings, the Thrush suddenly stopped dead and Wing Cdr. Douglas put the machine down as best he could. He landed all right in a small field and trickled slowly into a ditch and the undercarriage was damaged sufficiently to put the machine out of the Competition.

During the afternoon Sq. Ldr. Longton on the Blackburn Bluebird and Flt. Lt. Comper on the C.L.A.4 did some very pretty flying and also carried numerous passengers in a friendly way.

G. L. P. Henderson was hard at it on his Avro taking joy-riders from morning till night. Though he must have made dozens of landings one never saw him do a landing which was other than perfect.

The Avro Avian came in after its second circuit with the tank leaking at the rate of about two drops a second. The Stewards ruled that the tank might be taken out for repair but that it might not be replaced. This tank is an aluminium one made to save a few pounds weight and it seems quite likely that this saving may be the undoing of the Avian.

The tank was taken out and rushed down to Hythe where a man was found who could weld aluminium, but it was 5.45 p.m. before Mr. Hinkler was able to start and the tank was still found to be leaking slightly at the top. He therefore put quite a small quantity of petrol into the tank, just enough to get to Eastbourne and back and started off.

Meanwhile, Flt. Lt. Chick, who was then flying the R.A.E. Cygnet, returned, again with a punctured tyre. Evidently the air-road between Lympne and Hastings is very bad.

While waiting for Mr. Hinkler to return, G. L. P. Henderson took up an R.A.F. officer and oneself for a joy-ride in the Avro. The visibility was wonderful and Eastbourne and Hastings could be clearly seen so that all the pilots had to do was to aim straight at them.

At 6.45 p.m. Mr. Hinkler came in with the tank still leaking, but he filled up and went off to Hastings, arriving back at 7.40 in semi-darkness. He was of course renamed Mr. Sprinkler.

Mr. Uwins on the Bristol Brownie again to-day was the first to finish his laps and at the end of the day the position of the Hawker Cygnet, the Avro Avian and the R.A.E. Cygnet were unchanged, but minor alterations were made among the others, Mr. Uwins having picked up a place.

Tuesday, Sept. 14.

Tuesday morning was somewhat dull, and visibility near the North Foreland was said to be only two miles. Nevertheless, by 8.0 a.m. six of the remaining seven machines were on the starting line. The first off was Mr. Bulman, followed a few seconds later by Mr. Uwins and five minutes later by Mr. Frank Courtney. The course to-day is six circuits of the Dover-Margate-Herne Bay course.

The Avian had had its tank taken out to be re-welded and by 3.30 a.m. it was back at the aerodrome and almost in position.

A race for those eliminated or not having completed 50 per cent. of the course has been arranged for next Friday. A prize of £200 was subscribed by various people on the aerodrome yesterday through the efforts of Mr. Goodman Crouch. The remainder of to-day's proceedings will be described next week.

THE DOMINION CONFERENCE.

The Air Ministry announces that arrangements are being made, as in 1923, to give an air demonstration at the Air Port of London, Croydon, for the Dominion Prime Ministers and other representatives of the Dominions who will visit this country in October for the Imperial Conference.

The display will take place on the afternoon of Saturday, Oct. 23, and both Royal Air Force and civil aircraft will participate.

MR. COBHAM'S RETURN JOURNEY.

Mr. Alan Cobham, who, with Sgt. Ward, R.A.F., and Mr. Capel, is attempting to fly from Melbourne to London, arrived at Penang from Singapore on Sept. 7.

A Reuter message from Penang on Sept. 7 stated that the engine and machine were in perfect order and the crew well.

Mr. Cobham left Penang at daybreak on Sept. 8.

On Sept. 9 the Port Officer at Rangoon received the following telegram from Mr. Cobham:—"Forced down by bad weather at Puket. Will continue at first opportunity and try to arrive to-day."

Puket is a small town on an island off the Malay coast and is 550 miles from Rangoon.

No further news had been received from Mr. Cobham up to the time of going to press on Tuesday afternoon.

The authorities at Rangoon consider that heavy head winds may have forced Mr. Cobham to land near Victoria Point, which does not possess either a wireless or a telegraph station.

THE U.S. SCHNEIDER CUP TEAM.

Lieut. Comm. Homer C. Wick, U.S.N., commanding officer of the Naval Air Station, Anacostia, D.C., has been appointed as officer in charge of the U.S. Navy's Schneider Trophy racing team.

The following officers have been ordered to report to him for duty:—Lieut. G. T. Cuddihy, U.S.N., Lieut. F. H. Conant, U.S.N., Lieut. J. J. Glenhart, U.S.N., Lieut. W. C. Tomlinson, U.S.N., and 1st Lieut. H. J. Norton, U.S.M.C.

The 1926 Schneider Trophy Competition will be held at Norfolk, Virginia, on Oct. 24.

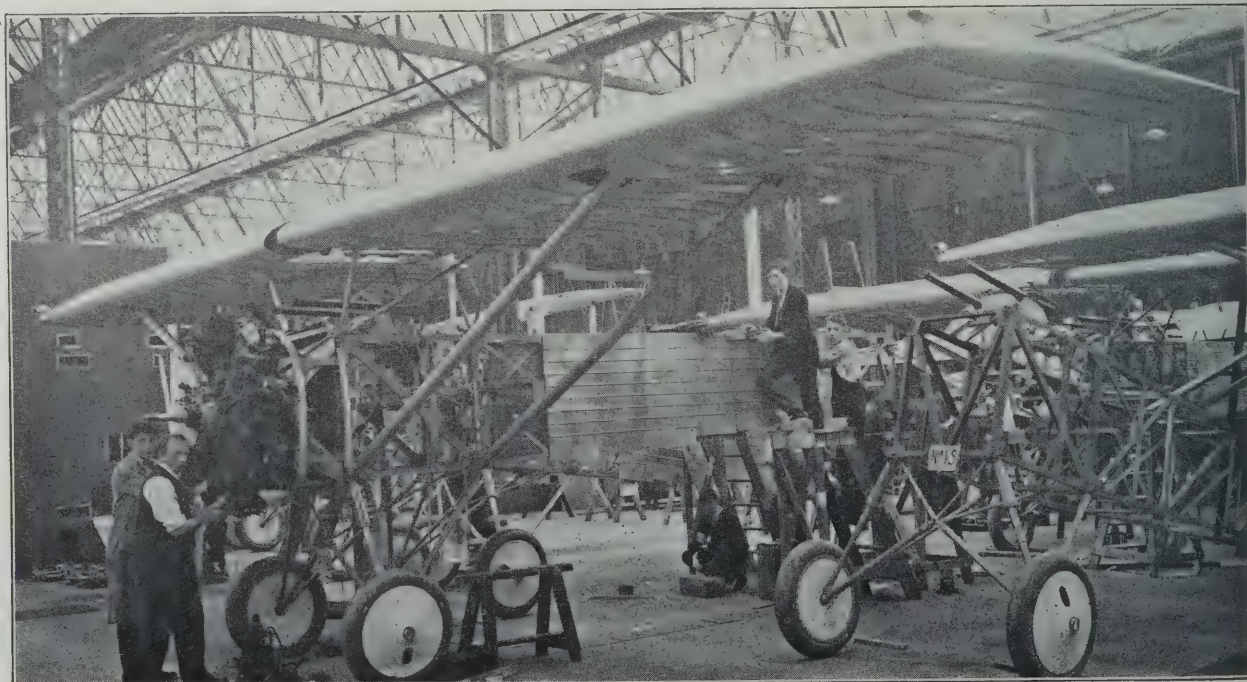
SPEEDING UP THE AUSTRALIAN MAIL.

The Australian Postal Department is examining proposals designed to expedite the incoming and outgoing English mails. The proposals provide for an air mail service linking up the eastern commercial centres with Perth.

It is estimated that four days would be saved in the receipt of English letters and two days saved on outward mails (*id est* a full working week), if the business community would guarantee 25,000 letters each trip on a basis of a 3d. surcharge per ounce, and if the additional revenue in passenger fares afforded sufficient encouragement in the initial stages. A day and night speed of 90 m.p.h. would have to be maintained.

SCIENTIFIC RESEARCH.

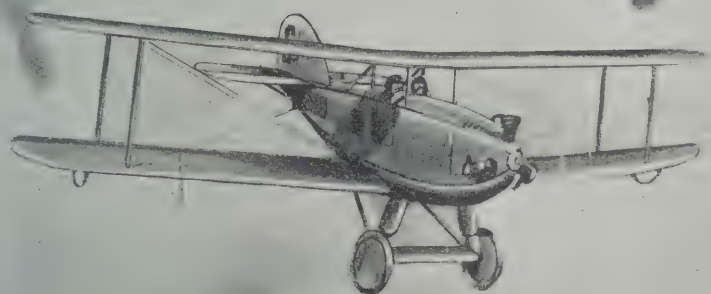
The Secretary of the Department of Scientific and Industrial Research announces that Professor Vernon Herbert Blackman, Sc.D., F.R.S., Professor Frederick George Donnan, C.B.E., D.Sc., LL.D., F.R.S., and Professor Frederick Alexander Lindemann, Ph.D., F.R.S., have been appointed by Order of Council dated Aug. 20, to be members of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research, in the place of members who have retired on the completion of their terms of office.



METAL CONSTRUCTION.—A number of Vickers-Wibault all-metal monoplanes with Jupiter engines in course of construction at the Weybridge Works of Vickers Ltd.

Blackburn

AIRCRAFT



Early type of two seater aircraft, shown below, offered no protection nor comfort to the occupants nor are there any records of the stress calculations for the structure having been accurately made.

The Blackburn "Bluebird," seen above, carries two people seated abreast in a comfortable cockpit with a side door entrance.

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The London Gazette.

Sept. 10.

GENERAL DUTIES BRANCH.—The following are granted S.S. comms. as Plt. Offs. on probation, with effect from and with seniority of, Sept. 1:—L. T. Carruthers, T. H. Downes, J. G. Elton, D. L. Maclean, J. F. Moir, R. S. Munday, L. Newcombe, G. J. Powell, G. A. Robinson, A. D. Vigors, H. N. C. Williams.

The following are granted temp. comms. as Flg. Offs. on attachment for four years' duty with the R.A.F.:—LIEUTS., R.N.—I. M. N. Mudie, C. A. R. Gibb, G. M. Pares, E. H. P. Slessor, R. P. Garnett, F. W. N. Bassett, J. W. Hale, R. F. G. Salmond, H. A. Traill, A. M. McKillop (Sept. 1). SUB-LIEUTS., R.N.—J. E. Fenton, R. H. Barrett, C. W. Phillips (Sept. 1).

The following Plt. Offs. are promoted to the rank of Flg. Off.:—F. S. Homersham, D.C.M., M.M. (Aug. 6); C. A. Bell (Aug. 17); E. Addis (Aug. 17); C. H. Noble (Aug. 21).

Flt. Lt. A. W. Symington, M.C., is placed on half-pay, Scale B. (Sept. 5). The following Flg. Offs. are transferred to the Reserve, Class A:—H. C. E. C. P. Dalrymple, J. M. Darroch, H. V. Michell, W. H. Phillips, C. J. Pockley, W. J. E. Rodwell, B. H. Shaw, A. E. Stewart, W. P. Wiltshire (Sept. 2); F. R. Offord (Lt., R.A.R.O.) (Sept. 6).

ACCOUNTANT BRANCH.—Flg. Off. R. W. Freeman is granted a perm. comm. in this rank (Sept. 8). The following Flg. Offs. are transferred to the Reserve, Class C (Sept. 5):—A. C. Pritchard, F. L. Wood.

MEDICAL BRANCH.—Flg. Off. F. L. White is granted a perm. comm. in this rank (Sept. 8).

The following are granted S.S. comms. as Flg. Offs. for three years on the active list, with effect from and with seniority of the dates indicated:—E. A. Rice, M.B. (Aug. 16); C. W. Coffey (Aug. 24). 302627 S-M. D. Breen is granted a perm. comm. as a Medical Quartermaster and Flg. Off. (Sept. 1).

Sq. Ldr. C. L. Colbran is promoted to the rank of Wing Cdr. (Dental) on promotion to Lt. Col. in the Army Dental Corps (July 1).

RESERVE OF AIR FORCE OFFICERS.—V. P. Field is granted a comm. in Class A, General Duties branch, as a Plt. Off. on probation (Sept. 7); Flg. Off. E. C. Hoar is confirmed in rank (Sept. 2); Flt. Lt. S. H. Gaskell is transferred from Class C to Class A (June 10); Flg. Off. W. H. Whitlock is transferred from Class A to Class B (June 19).

The following Flg. Offs. are transferred from Class A to Class C:—J. M. Leach (May 29); A. B. Cree (Aug. 15).

Flt. Lt. P. A. de Fontenay, D.F.C., ceases to be employed with the Regular Air Force (Sept. 7). The comm. of Plt. Off. on probation J. Kennagh is terminated on cessation of duty (Aug. 18).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Plt. Off.:—No. 600 CITY OF LONDON (BOMBING) SQDN.—W. R. Massey (Aug. 28).

Appointments.

Week ending Sept. 13.

GENERAL DUTIES BRANCH.—Wing Commander H. R. Nicholl, O.B.E., to No. 70 Sqdn., Iraq, pending taking over command, 3/9.

Flying Officers E. H. Fielden, to Station H.Q., Duxford, 13/9. B. A. Davy, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 20/3. L. W. Mercer, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 1/9. F. V. Beamish, to C.F.S., Upavon, on transfer to Home Estab., 14/9.

Pilot Officers.—The undermentioned Pilot Officers are all posted on appointment to S.S. Comms. (on probation) with effect from 1/9/26:—L. T. Carruthers, T. H. Downes and A. D. Vigors, to No. 9 Sqdn., Manston. J. G. Elton and L. Newcombe, to No. 11 Sqdn., Netheravon. D. L. Maclean, G. J. Powell and H. N. C. Williams, to No. 58 Sqdn., Worthy Down. J. F. Moir, R. S. Munday and G. A. Robinson, all to No. 99 Sqdn., Bircham Newton.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident to an Avro Bison of No. 421 Flight while landing on the deck of H.M.S. *Furious* at sea off Nab Tower, near Bembridge, Isle of Wight, on Sept. 6, No. J.48913 Leading Telegraphist James William Haddow, R.N., was killed. Flg. Off. Sylvanus George Connolly, the pilot of the aircraft,

and No. 347436 L-AC. George Frederick Wyborn sustained only slight injuries.

The *Times* report of the inquest which was held at Gosport on Sept. 9 gives the name of the victim as Hadden. It states:

Surgeon-Commander John Boardas, R.N., who saw the body after it had been recovered, expressed the opinion that Hadden was drowned as a consequence of his having been stunned when the machine fell.

Wing Cdr. Henry Richard Busteed, R.A.F., who saw the accident, said that the machine made a normal landing on the deck of the *Furious*, and then went over the side and fell into the water on its back. The pilot and the mechanic escaped, and the witness felt sure that Hadden could have escaped, too, had he not been stunned. No cause could be assigned for the accident, of which there was always a risk, but it was the first fatality that had occurred in the *Furious*, though she had done more work than any other seaplane carrier. Accidents had been very few, in fact, they had averaged only one in every 200 of the landings on her deck.

The Air Ministry regrets to announce that as the result of an accident at Tilshead, Wiltshire, to a Bristol Fighter of No. 2 Squadron, Manston, on Sept. 10, Flg. Off. Reginald Richard Reedman, the pilot of the aircraft, was killed, and Major Oliver Birkbeck, 108th (Suffolk and Norfolk Yeomanry) Field Brigade, Royal Artillery, (A.A.), was seriously injured.

The *Times* account of the accident states:—

The machine was one of several which have been co-operating with ground troops in the neighbourhood of West Down Camp during training period. The accident occurred when the machine was landing after having performed certain exercises. The pilot tried to land but ascended again, and it was while a second attempt was being made that the machine crashed.

The Staff College, 1928.

The examination for the Staff College course starting in January, 1928, will be held in February-March, 1927.

The Army Council will offer about 21 vacancies to be filled by nomination from the British Army, the Indian Army, the Royal Navy, and the R.A.F.

R.A.F. Cadetships.

The Air Ministry announces that the next examination of candidates for entry as flight cadets to the R.A.F. Cadet College next January will begin on Nov. 16. Forms of entry may be obtained from the Secretary, Civil Service Commission, Burlington Gardens, W.1, and must be returned by Sept. 20.

Full details as to entry into Cranwell are contained in Air Publication 121 and more general information is provided in an official handbook entitled *The Royal Air Force as a Career*, price 3s., from H.M. Stationery Office, Kingsway, W.C.2.

The Air Ministry points out that the total cost to a parent of putting his son in the R.A.F. through Cranwell is about £250 and that after the two years at the Cadet College an officer should have no difficulty in living on his pay.

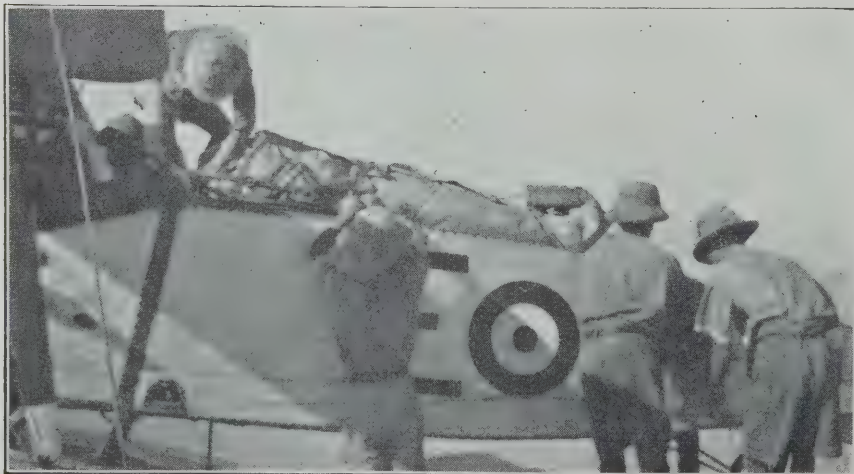
The War in China.

A *Reuter* message from Malta in *The Times* of Sept. 13 states:—

H.M. aircraft carrier *Hermes* has been detached from the fleet in the Aegean Sea and is due to arrive here this afternoon. After fuelling and taking on board other stores she will leave forthwith for Hong-kong.

The Service Coastal Cruise.

The R.A.F. Flight of Supermarine Southampton flying-boats (two Napier Lion engines), under Sq. Ldr. A. Durston, A.F.C., which started at Cromer on Sept. 6, arrived at Southend on Sept. 8, Ramsgate on Sept. 9, and the Isle of Wight on Sept. 13, according to plan.



EMERGENCY TRANSPORT IN KURDISTAN.—The incident illustrated was described by Air Marshal Sir John Salmond, A.O.C. Iraq, in his Dispatch from Kurdistan dated May 22, 1923. Describing the evacuation by air of 200 sick troops from Girde Tilleh, 60 miles from Arbil and 200 miles from Baghdad, the report stated:—"One Vernon while carrying sick made a forced landing in the most difficult country. A Medical Officer was skilfully landed at the machine by a Bristol Fighter which also removed three of the serious cases." The bundle on the top of the fuselage is one of them, and not a corpse.

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| ONE YEAR AGO | A Rolls-Royce Aero Engine in a Handley-Page Aeroplane flew from BRUSSELS to the BELGIAN CONGO (5,084 miles). |

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C.P.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Wilful Waste.

The continuous stream of communiqués pointing out the beauty and economy of life in the commissioned ranks of the Royal Air Force points to a certain shortage of applicants for these delights. Candidates are wanted for Cranwell, for Short Service Commissions, for the Stores and Accounting Branches, for the Reserve and Auxiliary Branches and for the Medical Branch.

It can hardly be believed that the supply of candidates does not meet the demand. The obvious deduction is that either the Selection or Medical Boards are defeating by a superfluity of efficiency whatever Department it is that issues these piteous appeals.

Now this is a true story. Two young men came to London to join the R.A.F. "A" was a doctor who enlisted in a Highland Regiment at the age of 16 and served from 1914-18 in France, when he was demobilised and duly qualified as a doctor with the idea of getting into the R.A.F. M.S. He passed the Selection Board and was turned down by the Medical Board as being unfit for overseas service. Fit for the trenches from 1914-18, but unfit for the R.A.F. M.S. "B" came straight from a Scottish public school famous for its Rugger, and went up for the Auxiliary Air Force. He passed both Boards, but a member of the Medical Board suggested that he should try and get a Short Service Commission. "B" was full-out for this, but was turned down by the Short Service Commission Medical Board as having a defective heart. He went straight to a famous heart specialist and was pronounced to have a perfectly sound heart. He has gone to Madras (which is an unhealthy area) and the R.A.F. has lost a keen officer (complete with first-class heart) and a fine Rugger player.

One has known of numerous cases in which men who would have been a credit to the R.A.F. in every way have been turned down while the Boards have passed others who give one to wonder how they were ever accepted.

Apologies to the Navy.

There was once an examiner who, when an examinee described a crab as "a red fish which walks backwards," remarked that it was an excellent description but for the facts that a crab is not a fish, is not red and does not walk backwards. A description of somewhat similar excellence was attached to a photograph of H.M.S. *Hermes* at Singapore which was published in THE AEROPLANE on Sept. 1. The description reads as follows:—

At Singapore.—H.M.S. *Hermes*, the ugliest ship afloat and the first vessel specially designed by the Admiralty as an aircraft carrier. She has a displacement of 10,950 tons and her complement includes 130 R.A.F. personnel and 20 aircraft. She has one long flying deck with single funnel, tripod mast and all superstructure carried right over on her starboard beam. She has been at Singapore for a long time while her aircraft have been doing photographic surveys of the country round for our Naval Base.

People who know her say that the lines of her hull are quite handsome when once one has become accustomed to the island site on the port beam which carries the funnel, mast and superstructure. The statement as to her tonnage was taken from *Jane's Fighting Ships*, but that also is disputed, as are the statements about her personnel and aircraft matériel. Furthermore it was the *Pegasus* and not the *Hermes* which was at Singapore for a long time while her aircraft did photographic surveys. Otherwise it is admitted that the description is correct.

The Luck of the Navy.

The Naval Correspondent of *The Morning Post* of Sept. 11 states:—

Instructions have been issued by the Admiralty that in future all officers and men of the Royal Navy and Royal Marines may be ordered to take casual flights in aircraft as necessary in the course of their ordinary duties.

No extra pay or allowance will be granted in such circumstances. This order indicates that aircraft has now reached the status of being a part of the routine life in his Majesty's Service at sea.

One need not look far ahead to the time when every ship of any size will be equipped with aeroplanes which will be used by her own crew for ship's duties, in much the same way as the ship's boats are now used.

[It will be remembered that similar instructions were issued to the Indian Army last May.—ED.]

The Auxiliary Air Force.

In connection with the annual training of the Auxiliary Air Force, No. 600 (City of London) Squadron, under the command of Sq. Ldr. H. W. H. James, M.C., arrived at the R.A.F. Station, Manston, on Aug. 28.

The Squadron is equipped with two D.H.9as and three Avro training machines, and has a strength of nine officers and 43 other ranks.

The training at Manston included flying, navigation, aerial gunnery, bombing and photography.

As Manston is the School of Technical Training (Men) for the regular Air Force there are excellent workshop facilities for the practical work of the Auxiliary Units.

An Error of Judgment?

If anybody wanted to ask a pertinent question in the House one might be framed somewhat as follows:—

Whether the Avro Ava bombing biplane which caused so much interest at the R.A.F. Display has been wrecked; if so, when and how; whether a Court of Inquiry has been held on the subject; whether the accident was attributable to an error of judgment; and if so, whose was the error?

The R.A.F. Swimming Association.

The first Championship Meeting of the R.A.F. Swimming Association will be held on Sept. 24, at 8 p.m., at the Holborn Baths, Endell Street, London.

The Band of the R.A.F. will play during the Meeting.

Admission will be rs. 6d. and 2s. 6d.

The following events will be decided:—

50 Yards Individual Championship.

100 Yards Individual Championship.

Plunging, Diving.

Inter-Unit Relay Race.

Inter-Unit Water Polo.

Inter-Services Relay Race.

Open Invitation Relay Race.

No. 28 Squadron (R.A.F.) Old Boys' Association.

The Annual Supper of the Association will be held on Oct. 2, at the White Horse, Holborn, at 6 o'clock for 6.30.

Tickets, 3s. 6d. each, may be obtained from the hon. secretary, C. T. Hodges, 102, Camden Street, N.W.1.

ITALIAN SUCCESS.

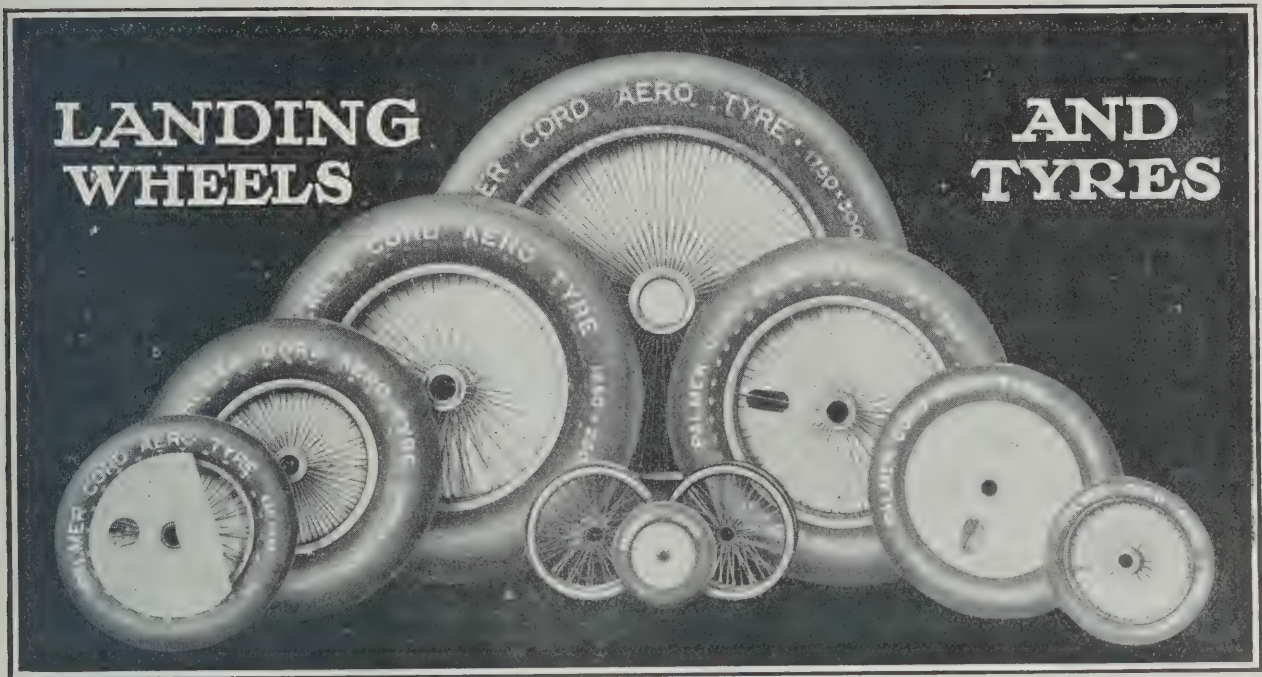
The first Italian commercial air line, which started operations at the beginning of last April, has been most successful so far. The service runs daily between Turin and Trieste, a four-and-a-half-hour journey, and during its first three months has carried 386 passengers, 2,961 lbs. of goods and 320 lbs. of mail.



ALL-METAL.—The first of the production Vickers-Wibault single-seat fighters (425 h.p. Bristol Jupiter VI engine) built at the Weybridge Works of Vickers Ltd.



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| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 31.92 | Central | 900 x 230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 133 | 250. | 80. | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 154 | 304.8 | 101.6 | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 115 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 126 | 304.8 | 152.4 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 139 | 400. | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55 | 125/60 | 1750 x 300 | 191 | 350. | 150.3 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250 | 80. | Central | " | 93 | 400. | 125. | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | | | | | |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THEORY AND PRACTICE.

The Guggenheim Fund for the Promotion of Aeronautics announces that two grants amounting together to about 600,000 dollars have been authorised by the Trustees of the Fund. One of these grants, of 300,000 dollars, has been awarded to the Leland Stanford University, California, for the financing of experiments and study in aviation and aeronautics. The work will be organised under three heads: (1) Aerodynamics, (2) Structural Design and Construction, and (3) Laboratory Research.

The men in charge of the first two divisions have not yet been appointed. The laboratory will be under Professor E. P. Lesley, who for ten years has been associated with Doctor W. F. Durand, and has spent a year in the Aerodynamic Laboratory at Langley Field, in which Dr. Durand is interested as a member of the U.S. National Advisory Committee for Aeronautics. Dr. Durand will be remembered in this country as having spoken quite a good deal on the subject of aviation during the latter part of the War 1914-18.

The second grant, of 200,000 dollars, has been awarded to the California Institute of Technology at Pasadena. The sum is to be expended (1) In extending the theoretical course in aerodynamics with the underlying mathematics and mechanics taught by Professors Harry Bateman, Edward T. Bell, and Paul S. Epstein. (2) In initiating practical courses in co-operation with the engineering side of the Douglas Airplane Company. (3) A research programme on airplane and motor design. (4) The perfection of "a new stagger-decalage, tail-less airplane recently developed at the Institute, primarily by A. A. Merrill"—whatever that may be. (5) The establishment of research fellowships in aeronautics, and (6) The planning and manning of a school to include building and testing not only of models but of full-sized experimental gliders and power-driven machines.

The remaining 100,000 dollars is to be allocated at the rate of 10,000 dollars per annum for 10 years for research work.

All that sounds very nice and it means spending quite a lot of money on aeronautics. But when one considers these gifts, and the gifts to the so-called scientists of New York University, one cannot help thinking that Mr. Harry F. Guggenheim and the Trustees of the Daniel Guggenheim Fund have allowed themselves to be "got at" by X-chasers and slide-rule merchants when they might be doing very much better work in financing practical experiments in improved aircraft.

The Trustees of the Fund would do well to remember that in all branches of engineering the only service which mathematicians and so-called scientists have ever done is to explain to the practical man why his apparatus works after he has made it work. When the scientist has given these explanations the practical man occasionally derives from them some pointer towards a new track on which he can make practical experiments—or as Mr. Lloyd George would say, some new avenue which he might explore. But no engineering structure, so far as one has ever been able to discover, has ever been produced from theoretical calculations.

So far as the Science of Aeronautics is concerned, it practically does not exist. Hitherto everything has been done by plain rule-of-thumb mechanics. The nearest approach to science has been made by what scientists call empirical research, or what a practical engineer would call rule-of-thumb experiments, in wind tunnels.

The Curtiss people, for example, and also the people at Langley Field and McCook Field, have got together a vast amount of figures as the result of careful experiment in wind tunnels which tally with results on full-sized machines. And one believes that from a wind tunnel experiment they can prophesy fairly accurately what a full-sized machine built to the same design will do.

If the Trustees of the Guggenheim Fund want to accomplish their proclaimed purpose, namely, to assure safety in flying, they will never get much nearer to it by financing figure-shifters who pose as experts in a science which does not exist. They will do very much better by spending their money on practical experiments with things like slotted wings and trailing-edge flaps, and new varieties of wing curves, and elevator and rudder controls and so forth.

Years ago Mr. G. H. Handasyde, whose ideas on aircraft design were so far in advance that machines which he built in 1918 are even to-day faster than machines built in 1926, when fitted with the same engines, always used to say that an aeroplane had some chance of being successful so long as the construction of the machine was at least three weeks in front of the drawing office: but if the drawing office once overtook the workshops the machine was bound to be a failure. Of course that was mostly Clydeside humour, but there is an element of truth in it of which the Trustees of the Guggenheim Fund should not lose sight.—C. G. G.

GERMANY'S FREEDOM IN THE AIR.

The Conference of Ambassadors has notified the German Government that the Inter-Allied Aeronautical Guarantee Committee ceased its activities as from Sept. 1 in accord with an agreement made at the Paris Conference in May last. This agreement, which was a sequel to negotiations begun at Locarno, removed all the restrictions, known as the Nine Rules, which prevented the Germans from building civil aircraft of any value.

In spite of the removal of these restrictions the German Government is still prevented from building or importing aircraft suitable for war purposes. It may not even possess aeroplanes designed so that machine guns, torpedoes or bombs may be fitted, nor may it have aircraft with armoured shields. And even racing aeroplanes may only be constructed or imported under special license from the Government.

The training of pilots is still held down under equally absurd regulations. Not more than 36 officers of the German Army and Navy may become pilots at their own expense. For six years to come only six members of the Army or Navy may be trained annually to fly at the nation's expense. All instruction in military aeronautics is *verboten*.

Fifty members of the police force may be trained as pilots. German constructors are forbidden to build aircraft to be controlled by wireless and without pilots.

And outside regular commercial air lines no aeronautical undertaking may be subsidised out of public funds.

According to *The Times* of Sept. 3:—

The German Government has undertaken to compile complete lists of factories, aircraft, and engines, pilots, pupils, traffic companies, and other owners of aircraft. These lists are to be given to the League of Nations, into whose hands the control is soon to pass.

The Inter-Allied Aeronautical Guarantee Committee, which now ceases to exist, was the successor of the Aeronautical Inter-Allied Commission of Control which expired in May, 1922. This latter Committee had the job of seeing that all aeronautical matériel of the German Army and Navy was surrendered and that it was made unusable. It also had to see that no further aircraft were built in Germany until permitted by the Allies.

Both the Commission and the Committee were notoriously French in sympathy, so everything possible was done not only to destroy German aviation but to humiliate the German aeronautical community. The English members of the Inter-Allied Commission did their best to do their duty with as little offence as possible and it is largely due to their tact and good nature that those concerned with aviation in Germany and in England are so friendly as they are to-day.

Although Germany's freedom in the air is not fully attained the latest alteration in the restrictions will at any rate leave Germany free to build commercial and sporting aircraft, and aero-engines for all purposes. One hopes in consequence that German scientists and German engineers in combination will soon produce aeroplanes showing so much improvement on anything which exists to-day that they will spur on our own designers and constructors to move more rapidly along the path of progress.—C. G. G.

THE PHILADELPHIA—WASHINGTON AIR LINE.

The Philadelphia—Washington air line, which was opened on July 6, on which Fokker F.VII3m. three-engined monoplanes are exclusively used, has proved to be a complete success.

During the first month, over 1,000 passengers have been carried, which means that each machine has started with full complement of passengers. For the moment the Philadelphia Rapid Transit Co. cannot satisfy all the demands owing to lack of machines. Approximately 400 seats have been booked in advance.

As soon as the first series of ten aircraft has been delivered, the service, which is now being run twice a day in each direction, will be considerably expanded. Also communications with other towns will be established after completion of the second series of ten machines. The American Fokker factory is working day and night to carry out the orders for commercial planes which are coming in from all parts of the States.

THE COVENTRY BRANCH OF THE R.Ae.S.

The Coventry branch of the Royal Aeronautical Society recently paid a visit to Whitley Aerodrome and the works of Sir W. G. Armstrong-Whitworth Aircraft Ltd. A special bus was ordered at the expense of the branch to convey the members and their friends to the aerodrome and to take them back at 6 p.m.

The visitors were received at the Officers' Mess, and groups of ten were allocated to guides who conducted them round the works. The Foreman of each Department was present and explained special points in connection with the various stages of manufacture. Mr. Hiscocks had kindly arranged to run the special machinery which produces steel spars, ribs, etc., and this part of the visit proved extremely interesting.

A single-seater fighter was flown and a demonstration of the flexibility of the Jaguar engine was given. The visitors were entertained to tea at the aerodrome.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FORD COMMERCIAL RELIABILITY TOUR.

On Aug. 7 the second annual Commercial Aeroplane Reliability Tour for the Ford Trophy began at the Ford Airport, Dearborn, Mich. On the day before, however, all competing aircraft had to carry out landing and take-off tests for embodiment in the formula chosen to determine the winner of the Tour.

This formula was as follows:—

$$\frac{\text{Contest load} \times \text{speed (m.p.h.)}}{\text{Stick time} + \text{Unstick time}} \times \frac{50}{\text{Engine displacement}}$$

where "stick time" means the time in seconds between the wheels touching and the aircraft finally coming to rest and the contrary in taking-off for "unstick time."

The actual Tour, which began on the 7th, was spread over a period of two weeks, and covered the following route:—Detroit—Kalamazoo (120 miles), Kalamazoo—Chicago (130 miles), Chicago—Milwaukee (60 miles), Milwaukee—St. Paul (300 miles), St. Paul—Des Moines (240 miles), Des Moines—Lincoln (165 miles), Lincoln—Wichita (220 miles), Wichita—Kansas City (170 miles), Kansas City—Moline (280 miles), Moline—Indianapolis (250 miles), Indianapolis—Cincinnati (100 miles), Cincinnati—Cleveland (200 miles), Cleveland—Fort Wayne (180 miles), and Fort Wayne—Detroit (140 miles). Total distance covered: 2,555 miles.

The following is the list of entries that actually started on the Tour, and it is interesting to note that with but one or two exceptions, all the machines are products of the past twelve months:

- (1) Buhl-Verville "Airster" (200 h.p. Wright Whirlwind), Louis Meister.
- (2) Travel-Air (200 h.p. Wright Whirlwind), Walter Beech.
- (3) Travel-Air (150 h.p. Hispano-Suiza), C. E. Clark.
- (5) Alexander "Eaglerock" (90 h.p. Curtiss O.X.5), R. B. Rolands.
- (6) Alexander "Eaglerock" (90 h.p. Curtiss O.X.5), J. R. Williams.
- (7) Ford-Stout "Transport" (three 200 h.p. Whirlwind), R. W. Schroeder.
- (8) Ford-Stout "Pullman" (400 h.p. Liberty), Leroy Manning.
- (10) Curtiss "Oriole-Racer" (160 h.p. Curtiss C.6), Casey Jones.
- (11) Mercury "Arrow" (160 h.p. Curtiss C.6), H. C. Mummert.
- (12) Fairchild F.C.1. (90 h.p. Curtiss O.X.5), R. H. Depew.
- (13) Woodson "Sport" (260 h.p. Salmson), Russell Hosler.
- (14) Woodson "Express" (260 h.p. Salmson), P. H. Doones.
- (15) Woodson "Express" (260 h.p. Salmson), H. H. Gallup.
- (16) Hess "Blue Bird" (90 h.p. Curtiss O.X.5), W. Munn.
- (17) Waco 9 (160 h.p. Curtiss C.6), J. W. Livingstone.
- (18) Waco 9 (160 h.p. Curtiss C.6), E. G. Knapp.
- (19) Pitcairn "Fleetwing" (160 h.p. Curtiss C.6), J. G. Ray.
- (20) Pitcairn "Orowing" (90 h.p. Curtiss O.X.5), H. F. Pitcairn.
- (21) Super-Swallow (90 h.p. Curtiss O.X.5), C. M. Sterling.
- (22) Babcock "Teal" (160 h.p. Curtiss C.6), A. F. Everett.
- (23) Ryan M.1 (200 h.p. Wright Whirlwind), V. Breese.
- (24) Driggs "Dart" (34 h.p. Wright-Morehouse), J. Laas.
- (25) Travel-Air (90 h.p. Curtiss O.X.5), C. S. Irvine.
- (26) Waco 9 (150 h.p. Hispano-Suiza), J. P. Riddle.
- (27) Stinson "Detroit" (200 h.p. Wright Whirlwind), E. Stinson.

There were three non-starters, a Sperry Messenger, and two new machines, one built by the Superior Aircraft Co. of

Detroit, and the other by the Cole Airplane Co. of Cleveland.

In the landing and take-off tests, the best times were put up by No. 26 Waco, take-off 6.8 secs., landing 11 secs. No. 2 Travel-Air, take-off 8.4 secs., landing 8 secs., and No. 17 Waco, take-off 8.4 secs., landing 11 secs.

The first half of the Tour, as far as Wichita (1,250 miles), eliminated five out of the twenty-five starters, and one more dropped out on the latter half.

The order of finishing was as follows:—(1) No. 2 Travel-Air (4,043.3 pts.); (2) No. 1 Buhl-Verville (3,972.1 pts.); (3) No. 27 Stinson Detroit (2,737.5 pts.).

(4) No. 17 Waco (2,672.3 pts.); (5) No. 26 Waco (2,587.1 pts.); (6) No. 18 Waco (2,287 pts.).

(7) No. 3 Air-Travel (2,230.5 pts.); (8) No. 23 Ryan M.1 (1,966.3 pts.); (9) No. 5 Alexander Eaglerock (1,949.9 pts.).

(10) No. 19 Pitcairn Fleetwing (1,779.6 pts.); (11) No. 10 Curtiss Oriole (1,708 pts.); (12) No. 20 Pitcairn Orowing (1,685 pts.).

(13) No. 21 Super-Swallow (1,414.2 pts.); (14) No. 25 Travel-Air (1,318.7 pts.); (15) No. 6 Alexander Eaglerock (1,306.2 pts.).

(16) No. 14 Woodson (1,273.9 pts.); (17) No. 8 Ford-Stout Transport (1,055.5 pts.); (18) No. 12 Fairchild (1,020.2 pts.); (19) No. 16 Hess Blue Bird (818 pts.).

Of the six to retire, four, No. 15 Woodson, No. 24 Driggs Dart, No. 22 Babcock Teal, and No. 13 Woodson, had engine trouble.

The three-engined Ford-Stout monoplane (No. 7), had airscrew trouble on the Cincinnati-Cleveland leg, half the metal blade of the right wing airscrew came out of the hub. The resultant vibration was so terrific that the engine fell off together with the right side of the undercarriage, which was connected with the engine by a vertical strut.

The pilot, Major Schroeder, continued to fly on two engines, but soon the left engine was found to be vibrating also owing to airscrew trouble.

The pilot headed for a suitable landing field and just before landing the left engine fell off carrying with it practically all of the remaining half of the landing gear. With no undercarriage, Major Schroeder made a wonderful landing on the belly of the fuselage, without any injury to himself or the cabinful of passengers.

The Mercury Arrow, which was lying third for more than half the Tour, in making a swish-tail landing at Cleveland buckled a wheel and turned over onto its back.

The winner of the Ford Trophy, the Travel-Air biplane (200 h.p. Wright Whirlwind engine), was entered by the Pioneer Instrument Co. The machine is used by that company as a "flying showcase," and is completely equipped with a full range of Pioneer instruments. It was flown by Walter Beech and carried as passenger Mr. B. Goldsborough, of the Pioneer Instrument Co.

From the above very brief resumé it would appear that the whole Tour was a success. Out of 28 entries, 25 started and 19 finished the complete tour of over 2,500 miles. The majority of the aircraft were produced within the previous twelve months, although seven were fitted with the well-known Curtiss O.X.5 engine, and seven with the Curtiss C.6 engine, both of fairly old design.

Five were fitted with the 200 h.p. Wright Whirlwind, and with the exception of the unfortunate fate of two of these in the three-engined Ford monoplane, as recounted above, machines fitted with these engines finished first, second, third and eighth. Up to the time of the accident the Ford-Stout three-engined monoplane lay third as regards number of points, although it was flying *hors concours*.

The Tour aroused considerable enthusiasm throughout its itinerary, and practically every town through which it passed provided free accommodation and amusement for all competitors, put up special prizes, and made it possible for competing pilots and crews to tour without any serious expense.



RUSSIANS IN ROME.—Here is seen the interesting all-metal biplane designed by the Russian engineer, A. N. Toupoleff and fitted with one 450 h.p. Lion engine, on which MM. Gramoff and Radewitch flew from Moscow to Berlin, Paris, Rome, Vienna and back to Moscow. They left Moscow on Aug. 31 and in three consecutive days covered 4,350 miles in 34 hrs. 22 mins. flying time. Their average speed was 114.6 m.p.h.

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THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Sept. 12.

Total flying time 52 hrs.

The following members had flying instruction:—Lady Bailey, C. H. Gould, E. G. Richardson, G. C. Bonner, M. D. Hamilton, A. I. A. Petty, K. A. St. John, J. C. Parkinson, G. Black, F. Clarkson, Sir John Rhodes, F. W. R. Martino, F. S. Boulton, E. K. Blyth, Lady M. Douglas-Hamilton, A. J. Richardson, D. Usher, J. A. R. Stevenson, J. Barros, R. L. Portway, H. Solomon, K. N. Pearson, B. B. Tucker, O. H. Best, M. P. Susman, C. H. Tutt, H. R. Presland, V. H. Dorce, C. E. Murrell, G. M. Hall, E. A. Lingard.

The following members flew solo:—N. J. Hulbert, L. J. C. Mitchell, Major Beaumont, E. G. Richardson, G. H. Craig, M. L. Bramson, Miss O'Brien, E. S. Brough, N. Jones, J. A. R. Stevenson, O. J. Tapper, A. H. M. Lees, H. Petre, E. D. Moss, R. C. Presland, K. N. Pearson, B. B. Tucker, R. Malcolm, W. Hay, E. E. Stammers.

The following had joy-rides:—Miss Wilson, Miss Morris, Mrs. Stammers, Major Maxwell, C. E. Burrows, Miss Gibson, Miss Terry, R. H. O. Tubbs, B. King, H. V. Stammers.

The Lancashire Aero Club.

Report for week ending Sept. 12.

Total time flown 35 hrs. 10 mins.

On two days owing to bad weather flying has been impossible. Machines in use L-R and M-Q (Moths), O-K (Avro).

Mr. Stack gave instruction to:—Messrs. Costa 6 hrs. 50 mins., Gerrard 2 hrs. 35 mins., Anderson 1 hr. 40 mins., Hughes 1 hr. 30 mins., Heys 35 mins., Newton 35 mins., Gattrell 35 mins., Dyson 30 mins., Leigh 30 mins., Moss 30 mins., Nelson 30 mins., Newton 30 mins., Fallon 25 mins., Collinson 25 mins., Bert 25 mins., Pattieux 20 mins., Goodyear 15 mins.

Mr. Scholes gave instruction to:—Messrs. Benson 35 mins., Fray 15 mins., Gattrell 25 mins.

Tests took 1 hr. 30 mins.

Solo flights by Messrs. Goodfellow 3 hrs. 5 mins., Parker 2 hrs. 15 mins., Leeming 2 hrs. 5 mins., Pitman 1 hr. 15 mins., Agar 1 hr., Lacayo 1 hr., Michelson 45 mins., Williams 45 mins., Marsland 25 mins.

The following had joy-rides with Messrs. Goodfellow, Leeming and Stack:—J. English 25 mins., A. Nelson 15 mins., H. Southern 15 mins., Mrs. Southern 15 mins., Mrs. Mills 15 mins., A. Berry 10 mins., F. Scholes 10 mins., A. Smith 10 mins.

Those visiting Woodford for the Display on Sept. 26 are advised to book rooms at The Queen's Hotel, Alderley Edge. Alderley Edge is within four miles of Woodford Aerodrome, and is on the main Euston-Manchester L.M.S. line. It is also on the main Manchester to Coventry road, it is the most convenient village to the Aerodrome, which has excellent rail, bus and motoring facilities. The Queen's Hotel is recommended.

THE SECOND AIR PAGEANT.—The Club will hold their second Pageant at Woodford Aerodrome on Sunday, Sept. 26, beginning at 2.30 p.m. Besides the displays of stunting, crazy flying, Bomb dropping, Air Fighting and Picking-up Messages, there will be races, in fact the Display will be rather a Race Meeting than a Pageant.

The various Clubs will compete in the races and a keen struggle is expected between London, Lancashire, Yorkshire and Newcastle Clubs. Two of the races are open to any types of machine and in these races the various manufacturers are competing with their latest types of aircraft. Manufacturers from all over the country are sending machines and some of the most modern of British racing aeroplanes will be at Woodford.

The Royal Air Force are sending a formation of Bristol Fighters, a Sopwith Snipe, and a D.H.53. These will give exhibitions of picking up messages, attacking trenches, bombing a mine layer, and aerial fighting.

Some of the World's best pilots, both civil and R.A.F., have arranged to be present. These include Messrs. Broad, Courtney and Hinkler.

At the previous Display, in April, 15,000 people were admitted and great public interest was shown, the roads for some miles round being lined with spectators. It is hoped therefore that the Press will make a special point of attending as nothing of this kind has ever been seen in the North. The Clerk of the Course, Mr. John Leeming, will attend to their requirements.

The prizes will be presented by Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, at the conclusion of the programme.

The following are the Competition Events:—

Inter Club Team Race.—Club Moths only. Open to one team of four Pilot Members of each Club. (N.B.—There will be no turning of machines on the ground during this race.)

Inter Club Members' Race.—Standard Club Moths only. Open to ab initio Club trained members only. Competitors will be started at 30 seconds intervals.

Bomb Dropping Competition.—Club Moths only. Open to Pilot Members with a limit of two entries per Club. Pilots will fly solo, and drop three 2 lb. bombs on to a target from a height of not less than 100 feet.

Landing Competition.—Club Moths only. Open to bona-fide Club Members only (excluding paid Pilot Instructors) and with a limit of two entries per Club. In this event pilots will land over a line, points being awarded equally for style of landing, and distance from line upon coming to rest.

Open Handicap Race.—Open to any Standard British Machine. Handicapping will be by Formula.

Open Speed Trial.—Open to any type of machine with an engine not exceeding 180 lbs. weight.

N.B.—In the two Open Races substantial Money Prizes will be offered in addition to a Cup.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Sept. 12.

Total flying time 38 hrs. 59 mins. Dual instruction with Mr. Parkinson 29 hrs. 35 mins. Solo 8 hrs. Passenger 1 hr. 15 mins.

All flying on G-EBLX. L.Y. being overhauled for C. of A.

The following members had instruction:—Sir Jos Reed, Messrs. E. C. Kennedy, Stobie, Whitfield, Leete, Harrison, Irving, H. Ellis, Bruce, Bell, Wardill, Craig, Thirlwell, J. M. Kennedy, Turnbull, Gilmore, Charlton, Mrs. Marcks, Matthews, Carr.

Solo:—Mr. Baxter Ellis, with passengers—Mr. Waller, Mr. H. Ellis and Mrs. Baxter Ellis. Mr. L. Smith. Mr. C. Thompson. Mr. F. H. Phillips with Miss Ellis. Dr. Dixon with passengers—Mr. Davidson, Mr. Grey, Mr. Gibson, Mr. A. Bell, Mr. Charlton, Mr. Grundy. Mr. N. S. Todd, Mr. Shales and Miss Little.

Passengers with Mr. Parkinson:—Mrs. Wilson, Messrs. Murray, Lemaistre and Boulton.

The Club's First Flying Meeting, as reported last week, was a complete success, from every point of view. The weather was excellent and the various forms of advertising used proved effective and drew spectators from all parts of the three Northern Counties.

It is very gratifying indeed to find, in an area not considered to be very deeply interested in flying, that such evolutions as slow flying and down-wind loops were fully appreciated by a large proportion of those present.

The thanks of this Club are extended to Air Commodore J. G. Weir and the London Aeroplane Club and Yorkshire Aeroplane Club, who so sportingly entered machines. Members of both these Clubs attended, in spite of the distance they had to travel.

It was unfortunate that the football match, between teams mounted on motor-cycles, resulted in the spectators invading the Aerodrome, but they readily returned to the barriers when the match was over.

Two events which were not reported in last week's issue resulted as follows:—

OPEN HANDICAP.—1, A. N. Kingwill; 2, H. S. Broad; 3, J. D. Parkinson. LANDING COMPETITION.—1, A. M. West (Yorks.); 2, R. Kenworthy (Yorks.).

The latter Competition was flown on the morning of the 5th (Sunday).

On Sunday afternoon the members of the Newcastle Club competed for the Cup presented by Mr. Thos. Todd. All the pilots who hold licences took part, and Mr. R. N. Thompson's win was exceedingly popular. Dr. Dixon a close second.

The Yorkshire Aero Club.

Report for week ending Sept. 12.

The following members had dual instruction:—Messrs. Armitage, Leatham, Watson, Mann, Swift, Brown and Barnes.

The following flew solo:—Messrs. Wood, Norway, Fielden and Carter.

Total hours flying, 8 hrs. 30 mins., consisting of 5 hrs. 45 mins. dual, 2 hrs. 25 mins. solo, 20 mins. tests.

Mr. Leatham was ready for his first solo on Friday, but the weather unfortunately was too misty for him to fly.

There are five members ready to pass their certificate tests as soon as we get a barograph.

We had a great time at Newcastle, and thoroughly enjoyed ourselves, winning two firsts and two seconds.

We were also very well entertained at the "Turk's Head," where Messrs. Fielden and West were in great form.

We are flying at Manchester shortly, and hope to bring back those silver tankards.—R. W. K.

The Hampshire Aeroplane Club.

Report for week ending Sept. 9.

Total flying time, 17 hrs. Instruction flying, 12 hrs. Passenger flying, 5 hrs.

The following members received instruction:—Miss Home 1 hr. 32 mins., Messrs. Fry 2 hrs., Bumble 1 hr. 15 mins., Perfect 1 hr. 10 mins., Bound 50 mins., Bishop 40 mins., Heathcote 30 mins., Dobson 25 mins., Bowen 20 mins., Kerry 20 mins., Courtney 25 mins., Nicholson 20 mins., Heathcote 20 mins., Everett 20 mins., Henderson 20 mins., Carnell 18 mins., Dartnall 15 mins., Wing Cdr. Wyllie 10 mins., Morley 10 mins., Flt. Lt. Crawford 10 mins., Stokes 8 mins.

On Sept. 4 the Club received a visit from Air Vice-Marshal Sir Sefton Brancker, C.M.G., D.S.O. He was met at Southampton by Mr. O. E. Simmonds, Chairman of the Committee, and Mr. R. V. Perfect, Hon. Assistant Secretary. Sir Sefton spent the afternoon on the Aerodrome watching the Moths and, after tea in the Club House, he was flown to Beaulieu by Mr. Thomson.

On Monday, Sept. 6, Mr. Thomson flew to Beaulieu, where he picked up Sir Sefton Brancker and conveyed him to Lympne. The journey from Beaulieu to Lympne was done in 1 hr. 30 mins. in spite of very poor visibility, which forced the pilot to fly within 50 feet of the water for long stretches. Mr. Thomson flew back to Hamble again on Monday afternoon.

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Mr. Cobham and the Well-Balanced Petrol

In the great flight Mr. Alan Cobham is now making from England to Australia and return he used Shell Petrol from Singapore to Melbourne and back to Singapore.

It is significant that, for the most hazardous part of his journey, Mr. Cobham chose Shell, the well-balanced petrol, and that *this Shell Petrol was not mixed with a single drop of any other fuel.*

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ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 24; Tuesday, 27; Wednesday, 19; Thursday, 11; Friday, 6; Saturday, 26; Sunday, 14.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 46, passengers 44, freight 18 tons.

ATR UNION:

Paris—London: Machines 26, passengers 87, freight 10½ tons

K.L.M.:

Amsterdam—Rotterdam—London: Machines 32, passengers 81, freight 6,606 lbs.

SABENA:

Machines 11, passengers 41.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 3, passengers 12.

PRIVATE:

Machines 1, passengers 3.

Total number of trips by British Machines, 46, carrying 448 passengers. Foreign Machines, 120, carrying 209 passengers.

Comparative Figures:

Week ending Sept. 12:

Machines, 167; Passengers, 657; Crews, 193; Total personnel, 850.

Corresponding week, 1925:

Machines, 136; Passengers, 607; Crews, 184; Total personnel, 791.

Corresponding week, 1924:

Machines, 137; Passengers, 572; Crews, 165; Total personnel, 737.

Corresponding week, 1923:

Machines, 138; Passengers, 549; Crews, 223; Total personnel, 772.

Corresponding week, 1922:

Machines, 121; Passengers, 411; Crews, 215; Total personnel, 626.

Corresponding week, 1921:

Machines, 96; Passengers, 224; Crews, 120; Total personnel, 344.

Corresponding week, 1920:

Machines, 115; Passengers, 285; Crews, 142; Total personnel, 427.

Croydon Notes.

Owing to Lympe there is not very much Croydon this week. There was another completely blank day owing to the weather. Imperial Airways have now got a second Argosy. It is the one which appeared at the Pageant.

The Argosy is so well liked that it definitely comes into the class which entitles it to be called, in current slang, a "wizard kite," to denote its excellence. Ever since the original one arrived it has never been off service. In fact, it is the only air-liner which one remembers which has come onto regular service without having to be altered radically before it was right. It is only fair to recall that it was designed exactly to Imperial Airways' specifications.

The Löwenstein Air Service is continuing its work. There has been a constant interchange of machines, erstwhile under the control of Imperial Airways, between Spain, France, and Croydon.

One understands that Lt.-Col. Minchin has been loaned to Mr. Löwenstein for four months, and that he will fly a Fokker F.VIIa (Jupiter) which Mr. Löwenstein has acquired. It was flown down to Barcelona last week.—G. D.

The latest good story is told by Mr. MacIntosh. Flying from Barcelona to Pau on a D.H.50 against a strong wind he ran out of petrol at 12,000 feet over the Pyrenees. Gliding down he landed in a field miles from anywhere among the foot-hills on the French side. Two women came out to the machine and one said to him, "Is there anything we can do for you? And where do you come from?"—Mr. MacIntosh replied, "I come from Croydon." The lady said "So do I! My father is the Mayor of Croydon."—It sounds like stretching the long arm of coincidence, or pulling its leg, rather hard.

THE GUBERNATORIAL TOUR.

The Perth (Australia) correspondent of *The Daily Telegraph* in a message dated Sept. 6, states:—

Lord and Lady Stonehaven arrived here after remarkable journeys by aeroplane over the greater part of North Queensland, the Northern Territory, and the north-west of Western Australia. Lord Stonehaven has thus seen larger areas of little-known Australia than any previous Governor-General. The intimate acquaintance obtained of actual conditions in a country presenting difficulties but also possessing great possibilities, will be a most valuable experience, which doubtless will be placed at the disposal both of the Commonwealth and the Imperial Government.

The stimulus afforded to aviation in Australia by Lord Stonehaven's enthusiasm in this direction is already considerable. In an interview the Governor-General said that he had travelled over the three best aviation systems in the world. The absence of accidents was due to efficient organisation. The chief impression he had gained had been of the vast area of Australia. Each Australian town appeared to have a character essentially its own, but one quality all had in common—splendid loyalty to the Empire.

Lord Stonehaven's tour has created a most favourable impression, the influence of which will be incalculable in promoting respect and admiration for the King's representative and his evident desire to secure practical and detailed personal knowledge of the Commonwealth during his term of office.

Lord Stonehaven's machine is a De Havilland 50 with a Siddeley Puma engine.

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WARSAW—TOKYO—WARSAW.

Lieut. Orlinsky, of the Polish Army Air Force, who has flown from Warsaw to Tokyo, via Siberia, on a Breguet XIX biplane, left Tokyo on Sept. 11 on his return journey. He was forced to land at Okayama by stormy weather, but left on Sept. 12 to fly to Mukden.

A SOUTH AMERICAN ACCIDENT.

A Junkers seaplane belonging to the Sociedad Colombiana de Transportes Aereos (S.C.A.D.T.A.) crashed into the top of the Dona Juana Mountain near Honda, in the Province of Tolmie, Columbia, South America. The pilot and several passengers were killed. This is, so far as one can trace, the first fatal accident on the Scadta Service.

E. H. BARKSDALE.

On Aug. 11 Lieut. Eugene H. Barksdale, U.S. Army Air Corps, was killed at McCook Field, Dayton, Ohio.

He was demonstrating before some visitors when his machine stalled and spun. He left it by parachute, but the apparatus fouled the tail and at the same time he was struck by a wing. The parachute eventually got clear, but too late to break the fall.

Lieut. Barksdale learnt to fly in England and proceeded overseas with the R.F.C. in the spring of 1918 and joined No. 41 Squadron. He was officially credited with four, and unofficially with seven, enemy aircraft before he was shot down himself. He fell on the German side of the lines, set fire to his machine and was buried by a bursting shell. He eventually dug himself out and was picked up by a British infantry patrol and brought back to our lines.

After the War he became one of America's foremost test pilots. He devised many new methods of flight-testing experimental aircraft and on two occasions he owed his life to the parachute, once when a tail plane collapsed and a second time when a wing broke away.

It is to such men as Barksdale that America owes her remarkable progress in military aviation. That he should have been killed in a mere demonstration flight shows how unfair Fate can be.

A close friend has written:—"Not only has the Army lost one of its best pilots and one of its best testers, but one of the few men in the Air Corps who has any personal knowledge of bullets."

PERSONAL NOTICES.

DEATHS.

REEDMAN.—On Sept. 10, at Tilshead, Wiltshire, as the result of a flying accident, Reginald Richard Reedman, Flg. Off., No. 2 (Army Co-operation) Sqdn., R.A.F.

Mr. Reedman passed out of the R.A.F. Cadet College, Cranwell, in December, 1923, and was posted to No. 2 Sqdn., at that time stationed at Andover. He was promoted to the rank of Flg. Off. in June, 1925. He was posted for photographic duties last August.

Mr. Reedman played Rugby football for the Cadet College in 1923.

FORTHCOMING MARRIAGES.

BREAKEY—MAIN.—The engagement is announced between Flt. Lt. J. Denis Breakey, D.F.C., only son of Mr. and Mrs. J. E. Breakey, of Abbeydale Hall, Dore, Sheffield, and Meta McNiven Main (Bobbie), youngest daughter of the late Alexander McNiven and of Mrs. J. A. Main, of Langhurst, Chiddingfold, Surrey.

IRWIN—TEACHER.—The marriage arranged between Flt. Lt. H. Carmichael Irwin, A.F.C., R.A.F., and Miss Olivia Teacher, will take place at Holy Trinity Church, Farnham, on Sept. 23, at 2.30.

JENNINGS—JACOB.—The engagement is announced between Flg. Off. Godfrey Jennings, R.A.F., eldest son of Mr. and Mrs. F. S. Jennings, of Bedford Park, London, and Kathleen, only daughter of Mr. and Mrs. Harold Jacob, of Stamford Brook, London.

THOMAS—PAYNE.—The engagement is announced between Sq. Ldr. M. Thomas, D.F.C., A.F.C., R.A.F., second son of Mr. and Mrs. M.

Thomas, of Knighton, Radnorshire, and Miss O. L. (Betty) Payne, younger daughter of the late Frederick Gillies Payne and Mrs. Payne, 55, Manchester Street, W.1, and granddaughter of the late Sir Salisbury Payne, Bt., Blunham, Beds.

MARRIAGES.

GREGOR—JAMES.—At Lyon, France, on Aug. 28, Flt. Lt. J. B. Gregor, R.A.F. M.S., son of Dr. A. Gregor and Mrs. Gregor, late of Falmouth, Cornwall, and Evelyn Rose, daughter of Mr. and Mrs. A. H. James, of Haverfordwest, South Wales.

STRATFORD-TUKE—JOHNSTONE.—On Sept. 17 very quietly, at the Church of Our Lady and St. Benedict, Birchington, Flg. Off. Athol G. Stratford-Tuke, only son of Col. G. F. Stratford-Tuke, D.S.O., R.A., and Mrs. Tuke, to Betty, elder daughter of Mr. and Mrs. Yuile Johnstone, of Westgate-on-Sea, Kent.

BIRTHS.

PHILLIPS.—On Sept. 6, at Breage, Helston, Cornwall, to Stephanie, wife of Flt. Lt. A. W. P. Phillips, R.A.F.—a daughter.

PUMPHREY.—On Sept. 9, at Mayfield, Sunderland, to Muriel, wife of F. Alan Pumphrey, R.A.F.—a daughter.

TRENCHARD.—On Sept. 6, at Dancers Hill House, Barnet, to the wife of Air Chief Marshal Sir Hugh Trenchard, Bart., G.C.B., D.S.O., etc.—a daughter (stillborn).

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Vol. XXXI. No. 12.

SIXPENCE WEEKLY.

[Registered at the G.P.O. as a Newspaper.]

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ON THE £5,000 COMPETITION.

So far as the net results of *The Daily Mail's* £5,000 Competition prove anything they seem to show that we produced better two-seater light aeroplanes and engines in 1924 than we produce to-day. Which is misleading.

The first two machines in the Competition were Hawker Cygnets produced in 1924 by the Sopwith-Sigrist combination which produced the famous Sopwith "Tabloid" in 1913, and has been in the habit of producing at intervals ever since aeroplanes which in their own particular class have been the best in the World. The direct successor to the Tabloid was the machine on which Mr. Pixton won the Schneider Trophy in 1914. From that descended the Sopwith "Schneider" seaplane, which was the best single-seater of the R.N.A.S. right through the War, and the Sopwith "Pup," which was the Army's best single-seater till it was succeeded by the Sopwith "Camel," which in its turn was succeeded by the Sopwith "Snipe" which is still in service in Iraq—to the shame of the Air Ministry. And closely related to it was the famous Sopwith one-and-a-half-strutter which practically saved the Royal Flying Corps from the Fokker scourge in 1916-17.

Various and sundry highly technical designers from time to time have had a hand in producing Sopwith and Hawker machines, but somehow the machines have all had a family likeness to one another, and the Cygnet is quite unmistakably the descendant of the Tabloid. This continuity of the family characteristics is undoubtedly due to the fact that all the generations have been under the constructional control of Mr. Fred Sigrist, ever since the days when the only drawings for the Sopwith machines were done in chalk on the floor of a skating rink. One believes that the actual drawing office design for the Cygnet was done by Mr. Carter, to whom due credit should be given for his aerodynamic knowledge. But the Sopwith-Sigrist family likeness remains, and various constructional modifications were made recently so that the load could be increased while still qualifying for a Certificate of Airworthiness.

The third machine, the Bristol Brownie, is also the product of a pioneer firm and a pioneer designer. The Bristol Company was the first firm in the World to be formed as a com-

mercial undertaking for the manufacture of aircraft. The Brownie was designed in 1924 by Mr. Frank Barnwell more or less as a sideline between the serious work of designing war machines and carrying on progressive experimental work. Yet on a formula designed by the brightest brains of the Aeronautical Community in the year 1926 it proved itself to be the third best light aeroplane in England.

THE CHERUB TRIUMPHANT.

All the four machines which finished had Bristol Cherub Mark III engines. And, so far as one has been able to discover, not one of them had any work done on it, other than changing sparking plugs, right through the Competition.

The result is another triumph for the Bristol Aeroplane Co. Ltd. and Mr. Roy Fedden. If ever a firm and its designer deserved success they are that combination.

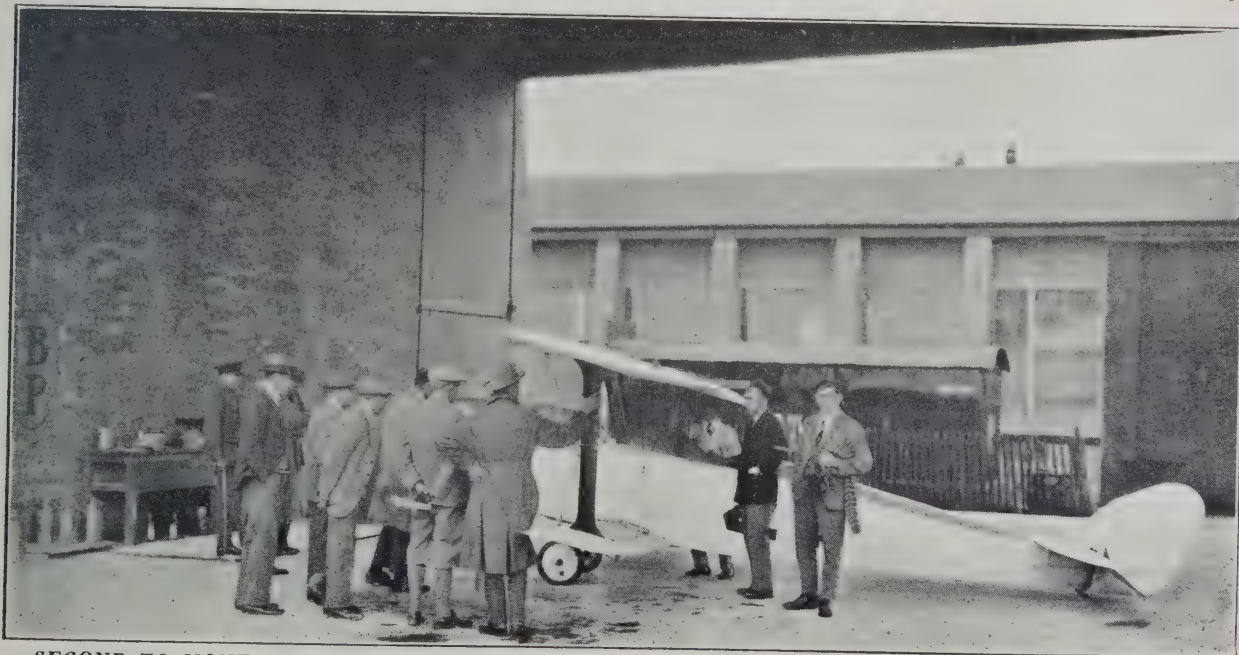
Mr. Fedden first became known as the designer and the driver of the Straker-Squire racing cars which made a very fine name for themselves before the War 1914-18. During the War he started making radial aero-engines under the name of the Cosmos Engineering Company. These engines showed great promise, but in those days nobody knew very much about radials and they were not developed to the point of real airworthiness before the firm came to the end of its financial resources.

With courage and foresight the Bristol Company took over the moribund Cosmos business, with the result that to-day they have in the Jupiter the World's premier high-power radial engine and in the Cherub they have the most successful light engine for aeroplanes.

THE DOPE PIONEER.

Another pioneer who should come in for his share of credit is Mr. A. J. A. Wallace Barr of the Cellon Company, for the first three machines were all doped with Cellon. And, incidentally, they have not been re-doped since they were built more than two years ago.

Mr. Barr is historically the person who first introduced Cellulose dope for aircraft fabric in this country. He started his business in the days before the War and imported his material from Germany. And in some ingenious way he



SECOND TO NONE.—The R.A.E. Cygnet being re-fuelled at Lympne. Having been beaten by a small margin by her twin sister, the Sopwith-Sigrist Cygnet, she can claim to be second only to herself. One of her two pilots, Flt. Lt. Chick, is seen on the right. With him is Mr. Peters, the Secretary of the R.A.E. Club, who flew as passenger on several days of the Competition.

continued to get it in the early days of the War until home-made supplies were available.

Since the outbreak of Peace he has stoutly maintained Cellon's place in the business sun. And to-day the firm is in a highly flourishing condition.

REMARKABLE AIRCRAFT.

Of those machines which put up good performances but failed to stay the course the D.H. Moth and the Avro Avian proved themselves to be truly remarkable aircraft.

With its 60-horse Armstrong-Siddeley Genet engine the Avian was carrying 130 lbs. more than its own weight in the form of useful load and was doing an average of about 70 miles an hour over the ground in spite of the filthiest weather imaginable.

The Moth also with a Genet was carrying almost its own weight in useful load and was only a few miles an hour slower. Although on paper figures they were beaten by the older machines, they proved themselves to be thoroughly practicable passenger-carrying aeroplanes which can be used for really long-distance touring. And when fitted with a different airscrew, to give speed regardless of petrol consumption, the Avian, with her full Competition load, was covering the 12½-miles Grosvenor Cup course at something well over 100 miles an hour.

The Parnall Pixie III, another of the 1924 vintage, and still one of the prettiest of light aeroplanes, put up a really fine performance. One only hopes that Mr. George Parnall will set Mr. Harold Bolas to work to produce another light aeroplane according to his latest ideas.

The Westland Woodpigeon never had a chance from the start of the Competition. But the way in which she flew with an airscrew which did not suit her, and the way she handled in the worst of weather, show that Mr. Bruce has at the Westland Aircraft Works people who can also produce light aeroplanes which are able to hold their own against any competition.

THE SUFFERING HEROES.

For the pilots no praise can be too high. Not only had they to contend on certain days with some of the worst weather imaginable, but whatever might be the weather they had to fly keeping in mind all the time the need for economising their petrol.

It is no joke at any time to fly a small machine carrying the limiting load allowed by its airworthiness certificate and to have to think whether one is using a few ounces more petrol than one might. But to have to do that and surmount or circumnavigate the Sussex Downs in the face of a gale and heavy rain straight off the Channel calls for skill and judgment and endurance in the highest degree.

Mr. Bulman, who piloted the winning machine through-out, is, in one's own judgment, the finest demonstration pilot one has ever seen. And he is the coolest and most imperturbable of aviators.

Flt. Lt. Chick and Flg. Off. Ragg, who piloted the R.A.F. Cygnet in turn, are both test pilots at Farnborough, and, because the test pilots are chosen for their skill, they are necessarily among the pick of the R.A.F. pilots. Flt. Lt. Chick is an experienced war pilot who won a Military Cross during the War and an A.F.C. since the War. Mr. Ragg is a post-war product, but has seen a considerable amount of active service in Iraq. The combination of the old and new generation of pilots was interesting, and demonstrated that there was nothing to choose between them.

Mr. Uwins is also a war-time pilot, and has been the Bristol Company's chief test and demonstration and experimental pilot for a number of years. Whether he is flying the biggest or the smallest machine he shows just the same steadiness and reliability.

Mr. Frank Courtney, the solitary "also ran," is too well-known for one to say anything about him. One need only say that whenever he was not in the air his views on the Competition and those who ran it were as concise and informative as are his opinions on the aeroplanes which he tests in such numbers.

AS TO THE FUTURE.

The question now arises as to what is going to be the result of this Competition. For those who have eyes to see, there is no doubt that there is going to be an enormous market for light aeroplanes. There is already a market of a sort for aeroplanes which cost £800 or so. And even at that price sales are only just beginning.

One is not among those who believe that aeroplanes are ever going to be as popular as motor-cars. Heaven forbid that the air should ever be as thick with aircraft as our abominable roads are with motor-cars. But one does believe that aircraft in what is commonly called the "light aeroplane" class will be sold in thousands and not in half-dozens.

If anybody could put on the market a machine with the capacity and performance of the Moth or the Avian at about £500 one believes that between fifty and a hundred would be sold in the first year, probably three or four hundred in the second year and something like a thousand the third year. And after that the maker, if he were wise, would cut his price to £350 and make a big fortune.

ENGINE PRICES AND PERFORMANCES.

But, the price of the aeroplane depends on the price of the engine. And with engines at anything between £250 and



"TO WHOM THE VICTORY."—Mr. Roy Fedden, the centre of the picture here and at Lympne, is the designer-constructor of the Bristol Cherub engines which carried all the four machines which finished the 1,994-mile course right through without trouble of any kind. On the right is Mrs. Fedden, pleased with her husband's triumph. On the left is Mr. Uwins, the veteran Bristol pilot. In the background may be seen, with soft hat and dark suit, Mr. Morris, the well-known representative of Palmers, who never misses a flying meeting, Mr. Jones of the Hawker Co., in overcoat,—and one "G. D." in cap and "minus fourteens."

Reliability!

NO other engine can be depended upon to such an extent as the Napier. Eight years' continuous development and improvement has brought it to a stage of efficiency unapproached by any other aero engine of any type.

For all purposes—defence, commercial and racing—the Napier has *proved* over and over again its remarkable reliability.

Napier successes are consistent. It is not a case of one engine—specially selected—achieving a remarkable performance, but a number of standard engines, taken from stock.

In the last seven months the Royal Air Force have carried out two service exercises—Cairo to Cape Town and back to England, and Plymouth to Alexandria and back—for which they selected Napier engines, and covered in all 83,600 engine flying miles.

Major Franco flew from Spain to Buenos Aires in a Napier-engined Dornier Wal flying boat, covering 12,518 engine flying miles.

Again, the First Prize in a competition to discover the best German commercial seaplane, was won by the only Napier-engined machine competing, the Heinkel-Napier.

For high efficiency and absolute reliability follow the lead of the Royal Air Force and select the

NAPIER

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No other engine fini.

The whole of the prizes
amounting to

£5,000

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Reliability and Fuel Economy
Competition at Lympne Aero-
drome were won by aircraft
fitted with the

Bristol

CHERUB AIRCOOLED ENGINE

*Every machine which completed
the 2,000 miles course had this
power unit.*

| | Aircraft. | Pilot, | Engine, |
|-----|-----------------------|--|-------------------|
| 1st | ... Hawker Cygnet ... | Flt. Lt. P. W. S. Bulman | "BRISTOL" CHERUB |
| 2nd | ... Hawker Cygnet ... | Flt. Lt. J. S. Chick & Flg. Off. R. L. Ragg | "BRISTOL" CHERUB |
| 3rd | ... "Bristol" Brownie | C. F. Uwins ... | "BRISTOL" CHERUB |
| 4th | ... Parnall Pixie ... | Capt. F. T. Courtney ... | "BRISTOL" BROWNIE |

THE BRISTOL AEROPLANE CO., LTD.

Telegrams: "Aviation, Bristol."

Flying

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the course!

The Cherub "Custom."

After the close of the Competition at Lympe a congratulatory enthusiast enquired:—"After the 1924 competitions you stated in your advertisements: 'The "Bristol" Cherub sweeps the board.' In 1925 it was altered to 'The "Bristol" Cherub again sweeps the board.' How is the phrase to be turned this year?" On receiving a reply that we did not contemplate using the expression at all, the remark was:—"No doubt you're right. After all, one advertises a novelty, not a custom."

SOME FURTHER SUCCESSES IN 1926

WITH THE

Bristol

CHERUB ENGINE.

At Lympe.

Of the subsidiary events held in connection with the main competition at Lympe the other Cherub successes included first, second and third in the Lympe Open Handicap, second and third in the Grosvenor Cup Race, first and third in the Stewards' Consolation Race, and second in the race for the prize offered by the S.M.M.T. In this last race the Cherubs were the only engines taking part which had already flown for 2,000 miles during the Competition.

In America.

At the National Air Races in Philadelphia the Heath Tomboy Monoplane, fitted with a "Bristol" Cherub engine, won the trophy for light aircraft offered by the "Dayton Daily News." This follows upon last year's successes at New York, when the Powell Cherub Racer won every event for light aircraft.

In Germany.

At the recent meeting at Mannheim, a Messerschmitt Monoplane fitted with a "Bristol" Cherub engine and piloted by Herr Eberhard von Conti, won the performance competition with results 25 per cent. better than those of the second competitor. More recently this machine is stated to have attained to an altitude of 5,000 metres in 60 minutes; a descent was made at this point as the limits of the recording barograph had been reached.

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THE HUMAN ELEMENT.—Mr. P. W. S. Bulman, the pilot of the Sopwith-Sigrist Cygnet which won "The Daily Mail" £3,000 Prize. He flew the machine through-out the Competition and never showed a sign of making a mistake.

£400 apiece there is no hope of getting a cheap aeroplane. And so the first thing to do is for someone to concentrate on producing a cheap engine.

The Cherub has proved itself to be about the most reliable thing in the way of internal combustion motors yet produced. But two cylinders are not enough, no matter how much power they give.

One would like to see Mr. Fedden's genius, and his unapproachable experience, turned onto the problem of producing a really cheap five-cylinder engine giving between 80 and 100 horse power. There is no necessity to tie the weight down to 170 lbs. It might well weigh between 250 and 300 lbs. and still fulfil its purpose, as the excellent Cirrus engine has proved. But it should certainly not cost more than £150.

The Genet has proved itself to be an excellent engine giving plenty of power for low weight. It is beautifully made and has a very pleasant note. At present the price is necessarily high and that alone makes it impossible for any aeroplane which is going to be sold to the ordinary private owner. And owing to the fact that it is so beautifully made one doubts whether it could ever be got down to the £150 class even if produced in quantities.

At its present price it might be sold to the Air Ministry for small training machines. But if it could ever be got down low enough in price it would be a great help to the development of light aeroplanes.

In all trades there is a kind of slogan indicating the aim of designers or producers. People wanted the sixty-mile-an-hour car, and they are getting 80 m.p.h. People tried to do ten seconds for the hundred yards on their flat feet, and the record is down to a fraction over nine. In one's youth people wanted a £10 bicycle, and now a good one can be got for £7 10s. or so. Fifteen years ago people wanted a £250 car, and now one gets a fully-equipped vehicle for something between £100 and £150. And thus the apparently unattainable is attained.

One suggests that the aim of the Motor Industry—or that part of it which has the intelligence to be interested in aircraft—should be to produce an aero-engine giving 100 h.p. weighing 100 lbs., and costing £100. It sounds impossible at the moment, but it can be done. And it will be done some day.

In the meantime if we can have an engine giving 100 h.p., weighing 200 lbs. and costing £150, we shall be a good way towards getting a really saleable light aeroplane.

MORE COMPETITION WANTED.

As to the aeroplanes themselves, the De Havilland Company are the only firm who at the moment are taking the

light aeroplane business seriously. One hopes to see competition arise in this line of business. Competition is always good for trade and, so far from wishing to see anybody else cut into the De Havilland Company's business, one wants to see other firms come along and increase the total field of business, so that the De Havilland output will be increased.

NOBLESSE OBLIGE.

On the results of *The Daily Mail* Competition it is obvious that the people who ought to come into the business seriously are the Sopwith-Sigrist combination, and the Avro Company.

The Baby Avro, built immediately after the War, was really the first of all light aeroplanes, and the Avian shows that the firm can build a very much better light aeroplane to-day. The success of the Cygnet proves also that the Hawker Company can produce what is wanted.

Having been responsible for winning £4,500 of *The Daily Mail's* good money, with the two Cygnets—and having thereby acquired advertisement for the Cygnet which must be worth at least as much money taking the World over—Messrs. Sopwith and Sigrist cannot in common decency retire to the commercial manufacture of Horsleys and Hornbills and things of that sort. They have done so much pioneering in the past, and they have done so much in one unconventional way or another to push on the progress of British aircraft, that they really must sacrifice their own desires to lead a peaceful commercial life and must come out and do some more spade-work for this new phase of flying.

A PERSONAL SUGGESTION.

Naturally a firm like the Hawker Engineering Co. Ltd., cannot be bothered building light aeroplanes in a production factory which is busy on war machines. But one would suggest to the good sportsmen at the head of the firm that they should start building half-a-dozen or a dozen light aeroplanes in a shed at Brooklands.

Let them go back and try and recapture something of the old Brooklands spirit. Let them rig up a drawing office in a corner of the shed and let them turn on a couple of bright young men with original, but not too original, ideas, to produce something like a Cygnet with a heavier undercarriage and a more powerful engine.

Let them turn over half-a-dozen really good workmen to do the building. Let them capitalise this little sideline quite separately from the Hawker Company. And let them take a sporting gamble on the future of light aeroplanes.

That is the only way to produce light aeroplanes cheaply. They cannot stand big overhead expenses for drawing offices and factory rents and heavy charges on machinery and so forth. They have got to go back to the old shed-on-an-aerodrome method of construction. That is to say, they have got to go right back to bed-rock again and start from the beginning.

In fact light aeroplanes have got to do what most of us



OLD RELIABILITY.—Mr. C. F. Uwins, who flew so pluckily into third place, indicates his satisfaction with the good old Bristol-Brownie-Cherub combination.

would like to do if somebody would perform the miracle for us. That is to say, they have got to start from babyhood, with all the worldly experience of a grown-up man already at their disposal. Probably if most of us had that opportunity we should make much the same kind of fools of ourselves that we have done in the course of our past lives, but we should do it quicker and we should probably get more fun out of it.

In much the same way the people who start to make light aeroplanes on those lines will also make mistakes. But they will make the mistakes more quickly and they will make faster progress. And anyhow it would be very much better than leaving light aeroplanes to develop as a somewhat neglected sideline to a war machine factory.

COMPETITION ARGUMENTS AT LYPNE.

The arguments at Lypne during the actual competition were even worse than those caused by the Eliminating Trials. One of the most virulent raged again round the Westland Woodpigeon. This machine, piloted by Flt. Lt. Park, had a forced landing out in the country, owing to a rocker-arm seizing on the Scorpion engine on the Dover—Manston course on Tuesday.

Assistance from Lypne managed to free the seized-up bearing, which, of course, was quite a simple job, and the pilot and passenger flew back to the aerodrome. There they were held up from starting on the last lap for a quarter of an hour while the Stewards argued whether unseizing a rocker was a major or a minor repair. Therefore the machine went off on the last lap a quarter of an hour later than it need have done.

The result was that it was dark before the machine was in sight of the aerodrome on its homeward journey. One of the Aero Club officials, in the interests of the safety of the pilot and passenger, proposed to send up rockets to show the direction of the aerodrome, which would only have been right and proper. But the Civil Air Traffic officials of the Air Ministry refused to supply rockets for the purpose, arguing that these rockets were only intended for the use of regular air line machines and not for private aircraft like those in the Competition. They even refused to sell the rockets at the Air Ministry's own price.

The result of it all was that, what with the quarter of an hour's delay on the part of the Stewards and the difficulty of finding the aerodrome in the dark, Flt. Lt. Park flew over the line just 48 seconds too late, and so the Seven Club were put out of the Competition after all their gallant sporting efforts.

There is no doubt that the ruling of the Stewards in this matter was utterly wrong. The machine was held up by them and not through any fault of its own, and the quarter of an hour's argument ought to have been "taken out of the time" just as the time occupied by incidents on the football field is taken out of the time.

The anxiety of the sportsmen who were running the machine and of the entirely sympathetic spectators, mostly concerned with other competitors, was described on a newspaper poster next morning as "Air Thrills at Lypne." The poster might more correctly have read "Air Frills at Lypne," in view of the way in which the Air Ministry officials put on frills in the most lordly official manner in the matter of the rockets, and in view of the haughty dismissal by the Aero Club officials of the plea that their argumentativeness should be taken out of the time.

The Daily Mail Competition has undoubtedly stirred up a vast amount of interest in the type of aeroplane which can be run by a private owner or by efficiently-conducted flying clubs. Every youngster to-day wants to fly just as every youngster used to want to drive a motor-car, and before that used to want to drive a locomotive.

The psychological momentum exists. What remains now is for somebody to take advantage of that momentum at the present moment of time. Whoever does it, and gives the Public what the Public wants, will make a fortune within the next ten years. And when he does he will have to thank *The Daily Mail*, at any rate to a considerable extent, for having made his opportunity for him.—C. G. G.

COURT-MARTIAL OR APOLOGY?

Unfortunately the sequel to this affair was still more unpleasant. Some person or persons unknown either started a rumour or definitely lodged a complaint with the Stewards that the trouble with the Scorpion was not a seized rocker-arm, but a broken rocker-arm, and that the said rocker-arm was actually replaced by a new one before the machine was flown back to the Aerodrome after its forced landing on the Tuesday. Which amounts to a charge of fraud against Flt. Lt. W. H. Park, M.C., D.F.C., Flt. Lt. A. P. Ritchie, A.F.C., Flt. Lt. A. L. A. Perry-Keene, and Flg. Off. G. E. F. Boyes, who were in charge of the machine, not to mention Sq. Ldr. A. G. Weir, another member of the Seven Club who was on the spot, and Sq. Ldr. the Lord Edward Grosvenor, the President of the Club.

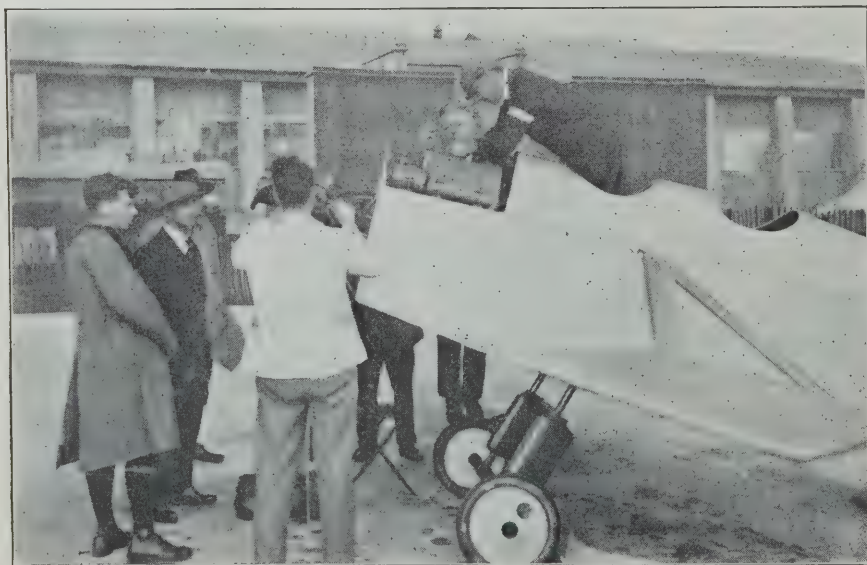
Apparently as the result of this story the Stewards sent word to the Seven Club that they wanted to inspect the engine on Wednesday. The engine was left untouched until after midday on Wednesday, and, as the Stewards did not go to inspect it, and as the A.B.C. people, the makers of the Scorpion, wanted to tune the engine up for the Grosvenor Cup Race on the Saturday, one of the officials of the A.B.C. Company proceeded to take the cylinders off the engine to have a look at its inside.

For doing this before the engine had been inspected by the Stewards the machine was disqualified from taking part in all further competitions at the Lypne Meeting.

Now this is a matter that has got to be fought to a finish. For the honour of the Royal Air Force and for the cleanness of the Sport of Flying, the affair cannot be allowed to rest where it is.

The Woodpigeon had already been disqualified from *The Daily Mail* Competition, and unjustly disqualified, for being 48 seconds late, as told hereinbefore. When once it was disqualified it was out of the Competition and the Stewards had no more concern in it so far as that Competition was concerned, unless the Seven Club wished to enter it for the S.M.M. and T. race for competitors who had covered half the Competition distance, in which race the machines were supposed to fly in precisely the condition in which they finished their flying in the Competition—though as a matter of fact there is nothing in the Rules to say so.

So far as the Rules are concerned there is nothing to show that the machines even had to carry their full Competition weights. The rule merely says "This race will be open to aeroplanes taking part in the Light Aeroplane Competition which have accomplished at least 50 per cent. of the course in the Competition." According to that a machine which



A LOOK-OVER.—Mechanics of the Parnall team examining Mr. Courtney's Parnall Pixie, and its Cherub engine, which made such a gallant bid for third place, and was the only unplaced machine to finish. The photograph shows clearly the simple undercarriage of the Pixie, which a designer has described as "the supreme piece of sauce in the Aircraft Industry." The idea of using two straight pieces of steel tube, without any staying whatever, and fixing them to an unstayed and unsprung cross-axle was bad enough in the eyes of the scientists. But to go and turn the tubes into sprung telescopes appeared to be outside the pale of decency. Nevertheless it works perfectly, and the originality of Mr. Bolas is justified.

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by owning a

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"Using a light aeroplane costs little more than running a fair-sized car—a de Havilland "Moth" for instance, with its air-cooled Cirrus engine can do about twenty miles to the gallon of ordinary petrol and a small quantity of ordinary oil. And it can do these twenty miles at about 80 miles an hour so that for week-end and touring, as the Master of Sempill has shown, the "Moth" can beat the car".....

Special correspondent to the "Morning Post" in a Series of articles on "FLYING FOR ALL"



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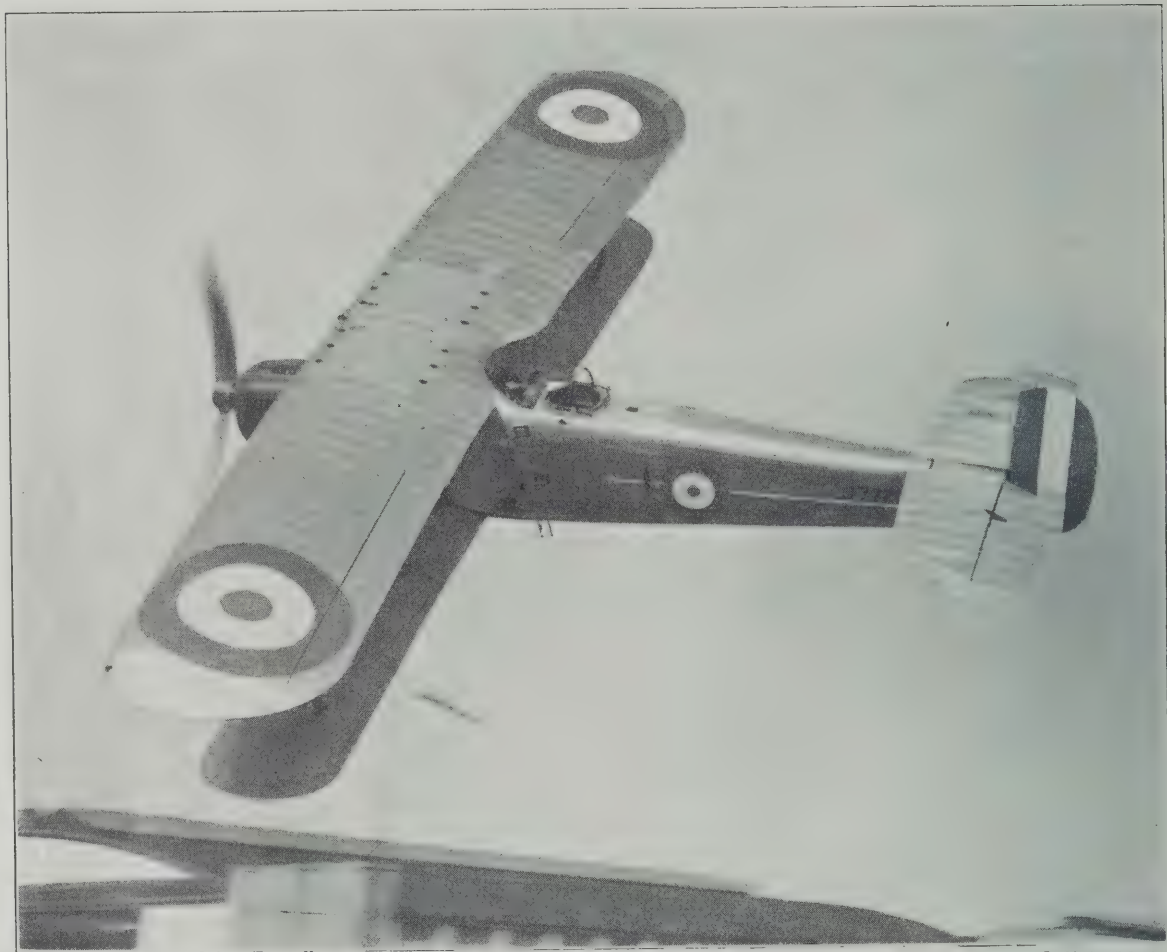
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OF ALL TYPES.



[Flight Photo.]

THE "HORSLEY."

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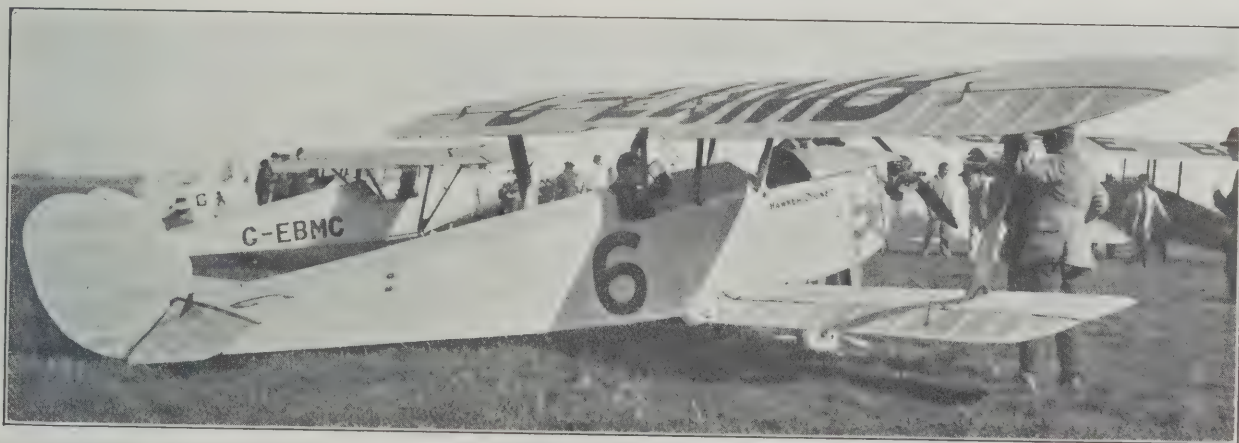
LIGHT 'PLANE COMPETITIONS, 1926.

FIRST - "Hawker Cygnet." "Cherub" Engine.

Pilot—Flt.-Lt. P. W. S. BULMAN, M.C., A.F.C.

SECOND "Hawker Cygnet." "Cherub" Engine

Pilots—Flt.-Lt. J. C. CHICK, M.C., A.F.C.
Flg.-Off. R. L. RAGG.



"Aeroplane" photograph taken with Kodak IIIa
THE HAWKER CYGNET (BRISTOL CHERUB).

Another Wonderful Achievement for Hawker
Design and Construction. Two Machines
Entered, Gaining First and Second Places in
the Reliability Competition.

100 per cent. EFFICIENCY.

THE H. G.
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September 18th, 1926.

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65-75 h.p. "GENET" Aircooled Engine
sweeps the board.

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Anything up to 175 lbs.

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Capt. Broad
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Speed: 90.2 m.p.h.

Capt. Broad
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GROSVENOR CHALLENGE CUP HANDICAP

Engines up to 275 lbs.

1ST, 4TH, 5TH, 6TH

The winner was a Blackburn Bluebird, piloted by
Squadron Leader W. H. Longton.

Speed: 84.95 m.p.h.

and Fastest Time

Major L. P. Openshaw (Westland Widgeon)

OUT OF 21 ENTRIES.

ARMSTRONG SIDDELEY MOTORS LIMITED.
(Allied with Sir W. G. Armstrong-Whitworth & Co., Ltd.)

Works and Aerodrome: COVENTRY.

London: 10, Old Bond Street, W.1.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

had finished fifty per cent. of the course and then crashed might have been rebuilt and still be eligible for the S.M.M. and T. Race.

However, that did not enter into the question. The Seven Club were merely going to tune the engine up for the Grosvenor Cup Race and fit its own airscrew, which they had been prevented from using by what appears to one personally to be a singularly stupid ruling by the Stewards.

Be that as it may, when these officials were informed that the cylinders had been taken off the Scorpion, they disqualified the machine from all further competition at the Meeting.

The only possible inference to be drawn from the desire of the Stewards to inspect the engine was that they suspected that certain members of the Seven Club had changed the rocker-arm instead of merely freeing it from its seized-up condition. Before disqualifying the machine they ought to have proved their suspicions. If those suspicions were proven then it would have been the duty of the Air Ministry to have court-martialled the officers concerned and to have cashiered them for conduct unbecoming officers and gentlemen.

Changing a part of an engine and pretending that it was not changed is perfectly plain fraud. In various sports persons found guilty of similar action have been prosecuted for endeavouring to obtain money or goods (in the form of prizes) under false pretences.

As the affair stands at present, the Seven Club are under suspicion of having perpetrated just such a fraud. And, as officers of the Royal Air Force, they cannot rest under that suspicion. They have got to clear their good name and they have got to clear it in public at the expense of the Royal Aero Club.

After the disqualification was announced a member of the staff of THE AEROPLANE asked two of the Stewards for an official reason for the disqualification. The Stewards definitely declined to give any reason. Such a refusal was quite justifiable, on the grounds that official announcements could not be made to one newspaper. But no public announcement has since been made, and a public explanation is necessary to the honour of the Royal Air Force.

WHAT IS A MAJOR REPAIR?

Another cause of argument arose over the amount of work which was done on Mr. Broad's Genet engine. On Monday night, when the oil filter was being examined, a broken circlip—which is a kind of spring ring which holds a gudgeon pin in position—was found in the oil filter. So the cylinders were taken off one by one until the gudgeon pin was found from which the circlip was missing.

Now taking an engine to pieces to see whether it is all right inside is an examination, it is not a major repair. But it would be fair to argue that if, in the course of that examination, something vital to the running of the engine has to be replaced, then the whole operation is a major repair.

In this particular instance, if the bits of the circlip had not found their way into the oil filter, there would have been no indication that there was anything wrong and the engine would have been run next day until the gudgeon worked loose, scored the walls of the cylinder, and seized up—and probably wrecked the engine. Or, as one competitor put it, nothing would have been known about it until a connecting-rod came out for a breath of air.

On Wednesday, the Moth was down again with a sheared magneto drive. Then, of course, arguments started all the way round as to whether, if the driving gear of the magneto had gone wrong, the replacement of a gear wheel could be regarded as a minor repair. The rules permit the changing of magnetos. But a gear wheel would be an integral part of the engine and not of the magneto.

However, it turned out that what had happened was that the magneto shaft itself, which is made of an aluminium alloy to save an ounce or two in weight, had fractured. So that brought the repair within the regulations. A new magneto was fitted where the machine had come down, and Mr. Broad flew home only to be put out next day because some of his ballast had been stolen while on the ground.

WHOLE OR PART?

Yet another argument arose over Mr. Courtney's machine, the Pixie III. One of the four lugs which hold the engine to the tubular engine-bearers showed signs of cracking. It is just an ordinary steel lug pinned and sweated to the end of a tube.

The Stewards ruled that if a new lug were fitted it would be a major repair and would put the machine out of the Competition. But they decreed that, instead of removing the old lug and fitting a new one, a part of the old lug might be removed and that a minor repair might be effected by pinning and soldering another lug on top of the remains of the old one—so long as it did not go all the way round the tube and thus constitute an entirely new lug.

For sheer ingeniousness in humbugging one's own conscience, this decision will take a lot of beating.

ALUMINIUM WARE.

Then there was the matter of the petrol tank in the Avro Avian, which is made of aluminium. This sprung a leak and



THE DOPE FIENDS.—Mr. D. T. Hutchinson of Titanine Dope (left) and Mr. A. J. A. Wallace Barr of Cellon Dope (right) as friendly rivals at Lympne.

the Stewards allowed the Avro people to take out the tank and send it into Hythe on Monday to be rewelded, as related last week. Although removing a tank and welding the seams strike one as being in the nature of a major repair, the Stewards could not very well refuse to allow the Avro people to have it done because, unfortunately, on the Saturday before the Competition began they had allowed the Supermarine people to re-solder a leaking joint in the tank of the Sparrow.

It seems that it is impossible to draw a hard and fast line between soldering and welding, although a soldering-iron and blow-lamp may well be part of the equipment of a private owner's workshop, whereas an acetylene welding plant would scarcely exist outside of a garage or an engineer's shop.

Another nice point arose out of this affair. Mr. Hinkler finished his last lap on Monday at 7.40 p.m. The Avian's tank, which was still leaking, and was only made petrol-tight by packing the leaking joint with soap, was taken out, sent into Hythe to be done, and was back on the aerodrome by 8.30 next morning (Tuesday). Now, according to the rules, work was allowed on the competing machines at any time between 7 a.m. and 9 p.m.—that is to say, an hour before flying started until an hour after flying finished. If a part of the mechanism was taken out of the machine and sent away to have a job done on it, might that job be done away from the aerodrome after 9 p.m. or before 7 a.m.?

If Mr. Hinkler only got his machine into the shed just before 8.0 p.m. on Monday night, it must have taken pretty well up to 9.0 p.m. to get the tank out of the machine, so presumably the second repair job was done after 9.0 p.m. Therefore the question arises as to whether the Avian ought to have been disqualified because work was done on its tank outside the official hours,—the whole idea in this 7.0 a.m. and 9.0 p.m. rule being to prevent firms from re-building their machines and engines during the night.

In passing, one may relate that when the soap-stopped tank was being taken out, someone said that he supposed that Mr. Hinkler was running on 80 per cent. Sunlight and 20 per cent. Vinolia,—a reference to the 80 per cent. Shell spirit and 20 per cent. Benzol used inside the tanks of the majority of machines. But one would like to know how the A.I.D. officials allowed the machine to fly with a leaking tank?

THE SPINNER TROUBLE.

Then there was an argument on Wednesday about the Avian's "spinner." Earlier in the week, the rim of the spinner had cracked and the Stewards had allowed the firm to replace the spinner as it was considered to be part of the airscrew—which might be changed, according to rule. On his second lap of the Brighton course on Wednesday, Mr. Hinkler came in without the spinner, which had fallen off about ten miles from home.

At first the Stewards wanted to disallow that lap because the machine did not finish in the condition in which it was presented on the previous Friday. After a lot of argument they agreed to allow the lap, but said that he must fit another spinner. They would not allow him to go on through

the Competition without a spinner, although the speed of the machine would have been slightly handicapped by not having a spinner.

Unfortunately, only two spinners had been brought down for the Avian, one on the machine, which had already cracked, and the spare one, which had just been lost. So Mr. Hinkler set to work with the help of some frightfully enthusiastic young aircraftmen of the R.A.F., one of whom was as clever a sheet metal worker as one has seen, and faked up the original cracked spinner to go onto the machine.

Unfortunately all this energy was wasted because the machine came down with magneto trouble later in the day and was put out of the Competition. It was distinctly hard luck, because, although Mr. Bulman's Cygnet was beating the Avian on petrol consumption, the machine was putting up a very fine performance indeed.

THE CARBURATION TROUBLE.

Incidentally, the petrol consumption trouble, which was mentioned last week, turned out not to be grit in the carburettor after all, although the grit was undoubtedly there. Apparently what was happening was that owing to the position of the air intake pipe of the carburettor, water from the outside air was condensing in it, dripping down and somehow getting into the carburettor itself and upsetting the mixture.

The only way of getting rid of the condensed water was by juggling with the throttle and the altitude control. The other Genet machines in the Competition gave no trouble in this respect, because they had heater-muffs on the cylinders so that they sucked in hot air instead of cold.

SPORTSMEN.

The Avro people, as usual, were thoroughly sportsmanlike in all their troubles, and the Avian certainly is a very fine machine. Now that they have found out the various causes of trouble, which could not be discovered sooner because there was no time between the delivery of the engine and the Competition in which to do all the test flying which is necessary to make such discoveries, it might be a good thing, after the Competition is over, to put the Avian through a distance and duration test.

The Aero Club issues Performance Certificates even when no actual records are broken, and one imagines that if the Avian were loaded up with extra petrol tanks, instead of carrying a passenger and all the ballast for the Competition, she might put up a very remarkable duration record.

Mr. Hinkler is fond of these long solitary flights, as witness his London—Turin flight of 700 miles and his Sydney—Bundaberg flight of 800 miles on the original Baby Avro with the little Green engine. So a few thousand miles non-stop would be rather in his line of business.

THE MISSEL-THRUSH.

An interesting event on Wednesday, when one happened to

be at Lympe, was the return of the Missel-Thrush from Weybridge, where her damage had been repaired in about four days. The front of the machine, from the engine bearers to the cockpit, which had been badly buckled when she stood on her head on the Thursday, was rebuilt, the starboard front lower spar, a box structure which was badly crushed, had a completely new piece spliced into it, and the crashed undercarriage had been rebuilt.

Mr. Bewsher, the A.N.E.C. designer, really does deserve to be congratulated on the machine. She is quite the cleanest job in aircraft construction that one has seen, outside the American racing machines and the Fairey Fox and Firefly.

With the little three-cylinder Burney and Blackburne Thrush engine she has quite a good turn of speed. And with a bigger engine she ought to be just about as fast as a fighting machine. The wing-folding arrangements are ingenious and yet utterly simple.

One only hopes that Mr. Bewsher will be given further opportunities of proving his ability, both as a designer and as a constructor. Like sundry other young men whom one knows, some of them hidden away in subordinate positions in the design departments of big firms, he has imagination, and also he has ideas which, if developed, may do quite a great deal to help that progress in British aircraft design which we seem to need so badly at present.

THE STEWARDS.

Apropos the unfortunate Stewards, one wishes once more to emphasise the fact that they are all doing their best according to their lights. One at least of them said that he would willingly pay some hundreds of pounds to be quit of his job. A job like this is a thankless task at any time and it is very much more so to an official who is keenly interested in his subject but is tied down by rules which have to be interpreted in the light of his own knowledge, or lack of it.

One has discovered that last week one did a grave injustice to one of the Stewards, to wit, Major H. R. Mayo. One said then that he had not been doing much flying of late—which remark one made by way of explaining to one's own satisfaction the apparent lack of sympathy with the competitors from the pilot's point of view. One has been informed definitely that Major Mayo is an officer of the R.A.F. Reserve, and has done all his regular flying training as such. He had in fact been flying only a day or two before the beginning of the Lympe Meeting.

So all one can say is that one wishes that he had not so much of the scientist in his constitution, for then he might not be so much inclined to look at things as unalterable formulæ, and might be a little more flexible in his interpretation of the rules.

Some budding epigrammatist said of the Stewards that two of them knew too little and one of them knew too much. Which is unkind but not untrue. Anyhow, they were impartial.—C. G. G.

LYMPNE NOTES.

BY ALL HANDS.

Tuesday, Sept. 14.

After a somewhat clouded morning the day became quite pleasant with fair visibility and a moderate breeze. The course being Lympe—Dover—Manston—North Foreland—Herne Bay—Lympe (66 miles per lap, to be flown six times) competitors appeared at the aerodrome with greater frequency than heretofore. With the short lap it was possible to go round twice without refuelling, consequently every other one of the prescribed landings at Lympe was a mere touching of the ground and a stop and an immediate take-off.

Before starting on the day's work, the Genet of the Moth was dismantled to discover the origin of a "circlip" found in the oil when the tank was drained, and to find out how much damage it had done

in coming out. Fortunately, little or no damage was done and the Stewards permitted a new one to be fitted to the gudgeon-pin from which it had disappeared. Certain competitors were distinctly wroth with the Stewards' decision in this case, for however minor the part, a good deal of work is involved in the replacement, and so high has feeling run over this matter of permitted repairs that it was alleged that the de Havilland staff had in fact surreptitiously replaced other components than the Stewards had permitted.

A definite denial by the de Havilland staff however fairly completely answered that suggestion.

The Avian later provided occasion for more discontent, for it landed not only with the tank still leaking, but with a loose airscrew boss

"THE DAILY MAIL" COMPETITION. DAILY AVERAGE SPEEDS.

| No. | Machine. | Sunday (312 miles) | Monday (366 miles) | Tuesday (396 miles) | Wednesday (312 miles) | Thursday (396 miles) | Friday (204 miles) | Overall average (1994 miles) |
|-----|---------------------------------|-----------------------|-----------------------|------------------------|--------------------------|-------------------------|-----------------------|----------------------------------|
| 2 | Moth (Genet) | m.p.h. 66.34 | m.p.h. 75.05 | m.p.h. 77.56 | m.p.h. (30.79*) | — | — | m.p.h. (55.84*/or 1386 miles) |
| 3 | Brownie (Cherub III) | 54.60 | 67.36 | 61.69 | 55.80 | 59.63 | 62.33 | 59.71 |
| 4 | Cygnet (R.A.E.) (Cherub III) | 53.30 | 57.92 | 58.96 | 48.05 | 56.59 | 56.15 | 55.68 |
| 6 | Cygnet (Cherub III) | 61.93 | 66.68 | 67.98 | 56.35 | 67.69 | 68.36 | 64.98 |
| 9 | Avian (Genet) | 68.76 | 78.60 | 78.63 | — | — | — | 72.71 |
| 10 | Avis (Thrush) | 51.25 | — | — | — | — | — | — |
| 14 | Pixie III (Cherub III) | 50.44 | 58.79 | 62.05 | 53.86 | 64.0 | 63.46 | 58.94 |
| 16 | Wood Pigeon (Scorpion) | 53.43 | 57.12 | (40.45*) | — | — | — | (48.73*) |

* NOTE.—Speeds in brackets are low as the result of delay in the course of one or more circuits, and are no measure of the real mean flying speed attained.

"Daily Mail" Light Aeroplane Competition

1st Flt.-Lt. P. W. S. Bulman, M.C., A.F.C.
Hawker "Cygnets," Bristol "Cherub III."

2nd Flt.-Lt. J. S. Chick, M.C., A.F.C.
& Flg.-Off. R. L. Ragg.
R.A.E. Hawker "Cygnets," Bristol
"Cherub III."

3rd Mr. C. F. Uwins. Bristol "Brownie," Bristol "Cherub III."

—all used CASTROL!

GROSVENOR CUP RACE

1ST Squad.-Ldr. W. H. Longton, D.F.C., A.F.C.
Blackburn "Blue Bird," Armstrong-Siddeley
"Genet."

2ND Mr. F. T. Courtney.
Parnall "Pixie III," Bristol
"Cherub III."

3RD Flight-Lt. J. S. Chick, M.C., A.F.C.
R.A.E. "Hurricane," Bristol "Cherub."

LYMPNE HANDICAP

1ST Flying Officer R. L. Ragg.
Sirocco Monoplane, Bristol "Cherub III."

2ND Mr. F. T. Courtney.
Parnall "Pixie III," Bristol
"Cherub III."

S.M.M.T. HANDICAP

1ST Mr. H. J. L. Hinkler.
Avro "Avian," Armstrong-Siddeley
"Genet."

2ND Mr. C. F. Uwins.
Bristol "Brownie," Bristol
"Cherub III."

All used—



C. C. WAKEFIELD & CO., LTD., Wakefield House, Cheapside, London, E.C.2.

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Westland Weasel 2-seater Fighter.



Westland Widgeon.



Westland Wagtail Single-seater Scout.



Westland Rolls Falcon Limousine.

WEST

THE GATE OF

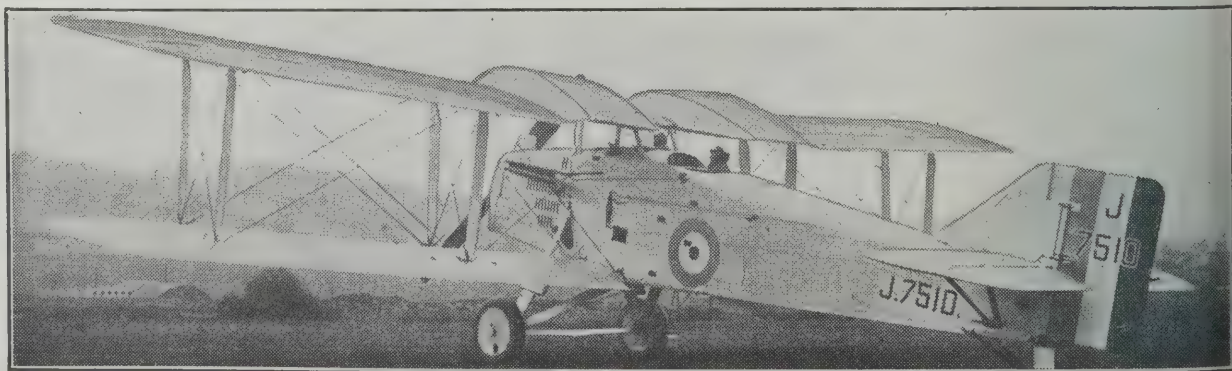
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For eleven years we have been designing and building Aeroplanes, and during that time we have also built up a reputation for sound design and first-class workmanship.

We are supplying numbers of machines to the Royal Air Force, both at home and abroad. We have our own 4-foot Wind Channel for scientifically testing models of all our designs before manufacturing, and our Aerodrome is situated by the side of the Works, for testing the finished machines.



The Yeovil Day Bomber.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

LAND THE AERIAL WEST

the situation of Yeovil
the borders of Somerset
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for communications—a fact
that was clearly shown
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brought here by car from
Bournemouth and distributed
from the Westland Aero-
plane by air to places as
far apart as Cardiff and
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Westland Seaplane N.17.



Westland Wood Pigeon.



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Westland Hispano Suiza Limousine.

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ENGLAND.



Westland Works, Yeovil, Somerset.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

and a cracked spinner. It was feared that the boss would need to be replaced, but fortunately it proved merely a matter of tightening the bolts securing the boss to the crankshaft, and the Stewards permitted this adjustment and replacement of the spinner.

Whilst these operations were being carried through the tank was again welded and was put back with a liberal plaster of soap over the troublesome area. Whether it was the last weld or the soap is not known but the tank leaked no more this day.

The Woodpigeon provided the next outbreak of feeling. A message was received that it had landed with engine trouble. This message suggested that a rocker arm had broken. Application to replace it was refused and the machine was marked "Retired" on the scoreboard.

After a considerable delay the machine returned, and it was announced that the offending rocker arm had only seized and had been freed, which was a permitted repair. The machine was allowed to continue in an endeavour to put in the required mileage.

On average speed for the completed laps it was obvious that she had but a fighting chance of getting through in time. Actually she failed, crossing the finishing line after dark, and 48 seconds after the official closing hour, and was therefore disqualified.

In the meantime, however, it is understood that an official protest had been lodged with the Stewards on the ground that the rocker had in fact broken and been replaced and that the reported seizure and subsequent freeing thereof was a deliberate deception on the part of the Seven Club.

Never before in a long experience of British flying meetings has one encountered a feeling among competitors which would render conceivable the accusations and counter-accusations which were now being made, and for the sake of the sport of flying it is to be hoped that the Aero Club will in future take particular care to avoid all possibility of a recurrence of this state of affairs. Exasperation with the conduct of the meeting was no real excuse for some of to-day's incidents, but there ought to be no excuse for such exasperation.

The day ended with Bulman on the Sopwith-Sigrist Cygnet still leading, and the Avian a little further behind than on Monday night, and the R.A.E. Club's Cygnet a good third. Properly to estimate the uselessness of the contest as an incentive to the production of useful reliable and economical two-seaters it is necessary to take account of the fact that up to the moment the D.H. Moth appeared to be last but one of the uneliminated.

Apart from the Competition there was much—but not enough—good flying. Soon after 10 o'clock Sq. Ldr. Longton began a demonstration of the reliability of the Blackburn Bluebird which consisted of a series of laps of the original 12½ mile Lympne course broken only for fuel replenishment at three hour intervals.

Air Commodore Borton, Commandant of the R.A.F. Cadet College, Cranwell, arrived on a D.H.9a in the morning and took the air in the Cranwell Club's machine.

A Fairey Flycatcher from Martlesham put up an excellent display of aerobatics, and then proceeded to park itself just outside the rails of the public enclosure. Her Service equipment includes a number of those deadly secrets known to everyone but ourselves, and she was arranged with her secretest secret nearest the rails, where it must obviously have become a prominent feature in numerous amateur snapshots.

Various Grebes, including the regular formation of three, threw their stunts in their usual perfect manner and so did a Woodcock-Grebe combination. A formation of three D.H.9as did a makee-look-see at Lympne, and late in the afternoon Air Commodore Longmore arrived on a Bristol, whose luggage accommodation for aerial tourists is decidedly superior to that of any of the competing machines. — W. H. S.

Wednesday, Sept. 15.

There was no Locarno spirit at Lympne, but fortunately there seemed to be a good supply of the kind that mingles so well with "Italian."

In the course of a variety of conversations I gathered that "They" (apparently conspirators from the Air Ministry, Research Dept., aided and abetted by other conspirators from the Royal Aero Club and *The Daily Mail*) were expected to enter the sheds in the dead of any night and eliminate all uneliminated craft with a few cans of petrol and a match.

This, I believe, is known as "nobbling the favourite," or words to that effect. But if it turned out to be a mere matter of "packing down and heeling out," I was prepared to back the uneliminated crews against the officials even giving the officials a numerical superiority of about five to one.

On Wednesday, Sept. 15, a gusty wind prevailed over the whole battle area, rising from 28 m.p.h. near the floor to 40 m.p.h. at 2,000 ft. This favoured the ground forces and the enemy was reduced by one machine, the Avro Avian, which failed to return from its last reconnaissance, having been forced to land at Hailsham through magneto trouble. Everybody will sympathise with Mr. Hinkler, who has had persistent bad luck.

The machines still in action on Wednesday night were:—Hawker Cygnet (Bristol Cherub III), P. W. S. Bulman; R.A.E. Cygnet (Bristol Cherub III), Flt. Lt. Chick and Flg. Off. Ragg; Bristol Brownie (Bristol Cherub III), C. F. Uwins; Parnall Pixie III (Bristol Cherub III), F. T. Courtney, and the D.H. Moth (Armstrong-Siddeley Genet), H. S. Broad. All in the above order of merit.

The R.A.E. Cygnet machine made a forced landing in a field near Battle, with a broken flying wire. Mr. Ragg, who was the pilot on this lap, repaired the wire and carried on with only twenty minutes lost, a very good show indeed.

All the pilots reported difficult flying weather, with bad bumps and down-currents in the neighbourhood of Itford Hill. This was not made a specific charge against the ground forces.

Apart from the Competition itself there were occasional bursts of aviation to be seen. The A.N.E.C. Missel Thrush, which had been counted out earlier in the hostilities, reappeared from Brooklands and was stowed away in the sheds to await the Grosvenor Cup Race. She was very much admired both technically and non-technically—her gory colour-scheme describes the feelings of all parties in the contest.

Two Bristol Fighters belonging to the R.A.F. spent the day at Lympne learning new methods in the art of war, and a Vickers Virginia from No. 9 Squadron at Manston drifted leisurely home to lunch with a fine contempt for the miserable little toy aeroplanes being tossed about in a mere breeze of 30 m.p.h. or so.

Neither of the members of the general public demanded their money back. The fact that they were allowed to stroke the warriors in their sheds seemed to compensate for the lack of the advertised entertainment of flying.

For those who managed to weather the space between lunch and tea by sitting in other people's limousines, there was some very pretty flying by Captain de Havilland in a Moth.

The arrival from Stag Lane of the King's Cup Moth, piloted by Major Hereward de Havilland, carrying a "useful load" of some 150 copies of *THE AEROPLANE*, put renewed kick into the proceedings.

Knives which had been lurking in sleeves, stockings, and other accessible positions, were produced for the peaceful purpose of cutting the string of the parcels. Friend and foe leaned against each other to share the first copies. The Armistice lasted at least 20 minutes while all arms rushed through the war news and admired their photographs—fore and aft views—in its pages.

Unfortunately *THE AEROPLANE* is not exactly a peace propaganda pamphlet, and when once the first hundred copies had been distributed, the combatants retired into their several trenches with an increased thirst for each other's blood.

Another interesting arrival was the Short "Mussel," fitted with a land undercarriage which is entered for the Grosvenor Challenge Cup as a Low-Wing Monoplane (27/60 h.p. Cirrus engine). The machine was piloted by Mr. J. Lankester Parker.

"THE DAILY MAIL" COMPETITION.

RESULT.

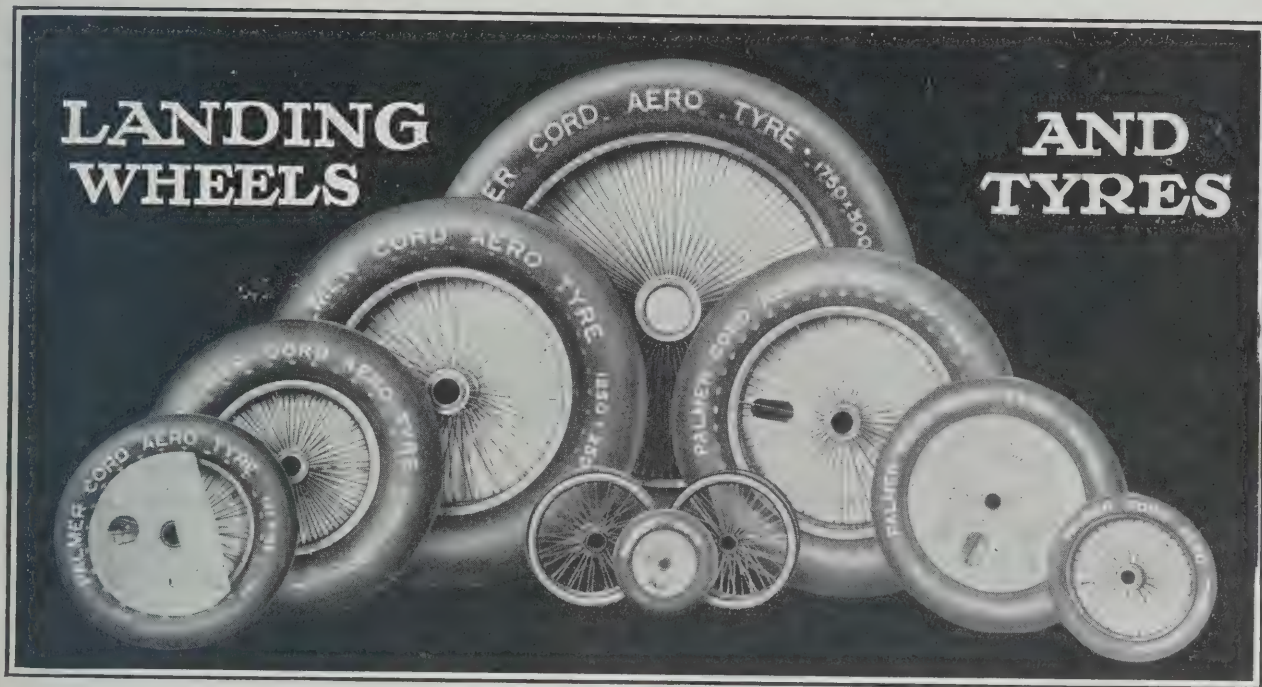
| No. | Machine & Engine. | Pilot. | Weights. | | | Total Mileage. | Fuel Used. | *Figure of Merit. | Overall Average Speed. | |
|-----|------------------------|-----------------|----------------|-----------------|--------------|----------------|------------|-------------------|------------------------|----------------------------|
| | | | Machine Empty. | Machine Loaded. | Useful Load. | | | | | |
| 2 | Moth (Genet) | Broad | 734½ | 1550 | 700½ | 1386 | 592.23 | (1641) | 55.84 | Disqualified on Wednesday. |
| 3 | Brownie (Cherub III) | Uwins | 623 | 1000 | 340 | 1994 | 402.09 | 1687 | 59.71 | 3rd Prize. |
| 4 | Cygnet (Cherub III) | Chick & Ragg | 430 | 340 | 850 | 1994 | 398.88 | 1808 | 55.68 | 2nd Prize. |
| 6 | Cygnet (Cherub III) | Bulman | 420 | 429 | 900 | 1994 | 388.83 | 2203 | 64.98 | 1st Prize. |
| 9 | Avian (Genet) | Hinkler | 695 | 827½ | 1600 | 1282 | 507 | (2092) | (72.71) | Disqualified on Wednesday. |
| 10 | Avis (Thrush) | Douglas | 609 | 340½ | 1000 | 508 | 108 | (1600) | — | Disqualified on Monday. |
| 14 | Pixie III (Cherub III) | Courtney | 523 | 340 | 924 | 1994 | 439.87 | 1541 | 58.94 | 4th |
| 16 | Woodpigeon (Scorpion) | Boyes & Ritchie | 569 | 346½ | 985 | 1008 | 334 | (1046) | 48.73 | Disqualified on Tuesday. |

* NOTE.—The "Figure of Merit" is Lbs. Useful Load × Miles Flown ÷ Lbs. of Fuel Used. That is, it is lb. miles per lb. of fuel. The figures in brackets for figure of merit are computed in the same way for machines which did not complete the course, but they are not necessarily directly comparable with these for the four machines which finished, for those machines which retired may have flown more miles than have been officially credited, as parts of uncompleted circuits have not been taken into account.

In a similar way overall average speeds for the disqualified machines usually include times spent otherwise than in flying.



PALMER



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | " | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 200 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 90 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | " | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | 975 x 225 | 133 | 250. | 80. | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | 1250 x 250 | 115 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | " | 126 | 304.8 | 152.4 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | 1500 x 300 | 139 | 400. | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | " | 191 | 350. | 150.3 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | 1750 x 300 | 193 | 400. | 125. | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | | | | | |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The Blackburn Bluebird caused intermittent excitement by passing backwards and forwards over the G.H.Q. of the ground forces all day, but as she showed no signs of hostile intent the Stewards emerged from their dug-outs and lunched with an air of reckless bravado.

This brutal harrier of the ground forces was later discovered to be Sq. Ldr. Longton, fortified with chocolate, flying 400 miles a day for the second day in succession on a machine which had been "unpinned out" of the Competition, as unworthy to compete, though certified, airworthy by A.I.D. and Stress Department alike.

The Stewards were on this day interned, for their own safety, in a tent on the aerodrome, where they were less accessible to injury than in their office in the shed which also houses the machines of the air forces.

The exact number of casualties among the belligerents is at present unknown, but one of the handicappers seems to have put his foot in it.—C. M. MCA.

Thursday, Sept. 16.

Thursday was a beautiful day like Tuesday and the circuit was the same as that of Tuesday, namely, Lympne, Dover, Margate, Herne Bay, Lympne, 66 miles flown six times, making a total for the one day of 396 miles, bringing the total for the Competition up to 1,782 miles by the end of the day.

The previous day, Wednesday, had, unfortunately, proved to be the last day of the Genet engines. The previous night Mr. Hinkler, who was due in at 7.20 p.m., had not appeared. The aluminium-alloy shaft of his magneto sheared and as he was so late in starting, owing to his tank and spinner troubles, there was no hope of replacing the magneto in time to finish. There was a very anxious wait until 8 o'clock and, as he had not appeared, he was disqualified.

A rumour had gone round late in the Wednesday afternoon that Mr. Broad's Moth-Genet had been weighed and found wanting by about 12 lbs. This rumour was, unhappily, confirmed in the morning.

It will be remembered that Mr. Broad had been compelled to land in a small field near Lewes and in moving his machine to another field he gave some small boys his lead weights to carry. Evidently one of the small boys had kept a 12-lb. weight as a souvenir and thus, on Thursday morning, the Stewards had another victim.

Everyone was sorry to see the Genets go out of the Competition, as they are extremely interesting engines and of a type which can be developed to a very useful end. The four survivors were all fitted with Bristol Cherub engines.

The day passed almost entirely without incident. The four machines went round the course with clockwork regularity and were all in by 5 o'clock, so that, for the first time, we were able to leave the aerodrome in reasonable time.

It was suggested on this day that as one or two of the machines had completed their course previously late in the evening without any lights, the Stewards should have disqualified them for infringing the Air Navigation Act. This caused people to say that the Stewards were not really trying. Others said that they were,—very.

Those who had now been eliminated from the Contest spoke of these officials as the "Unjust Stewards," while those who were left in referred to them as the "Three Just Men."—G. D.

As usual the few spectators present relied on the R.A.F. to liven up the otherwise extremely dull proceedings. A Woodcock and two Gamecocks arrived in the morning in very tight formation and gave a short demonstration. Also a Vickers Virginia and a Vimy came over from Manston and throughout the day various Grebes and Woodcocks from 25 and 17 Squadrons, Hawkinge, flew over and gave exhibitions of very pretty flying.—L. B.

Friday, Sept. 17.

On this, the last day of the Competition, misty clouds hung over the hills in the morning and the competitors delayed their start in the hope that the weather would clear. During the morning the spectators were almost entirely those connected with the Competition, but more people arrived later on and about two hundred, including the bar tenders, gatekeepers, etc., and about 50 motor-cars witnessed the finish of the Great Competition.

The mist continued to hang about and Mr. Courtney on Pixie III decided to start soon after 10 o'clock. He was reported at Croydon at 11.20, and landed at Lympne on the completion of his first lap at 12.10. In the meantime the other three competitors decided to fly the course together to avoid risk of collision in the fog.

Mr. Bulman on the Hawker Cygnet, Flt. Lt. Chick and Flg. Off. Ragg together on the R.A.E. Cygnet (because neither of them could bear to let it out of his sight), and Mr. Uwins on the Bristol Brownie started simultaneously for Croydon at 11.30, and all finished their first lap without trouble. After they had got away some of the machines entered for the Handicap Race to be held in the afternoon for those eliminated went up for tests, and Mr. Broad on the Genet Moth did some pretty loops and rolls in spite of the low clouds.

Mr. Courtney was the first away on the second lap of the course, and landed at Lympne at 14.30, thus being the first competitor to fulfil the conditions of the Competition. Mr. Bulman and Mr. Uwins started off next, and passed over Croydon at 14.24 and 14.27 respectively.

Mr. Bulman finished the course at 15.10 and thereby qualified for the First Prize of £3,000. He was greeted with loud hoots from the

horns of all 50 cars present, and on landing was congratulated by Sir Sefton Brancker and others of the gallant zoo.

Mr. Uwins landed at 15.15, which meant that, if Flt. Lt. Chick and Mr. Ragg failed to complete the course, the Brownie would take second place.

The R.A.E. Cygnet, piloted by Flt. Lt. Chick with Mr. Ragg, who had piloted the machine alternately with him, as passenger, started a little later than the others, and having passed Croydon at 14.49 was expected back at Lympne about a quarter to four. The well-meaning megaphone announced that "No. 4 was in sight," and when everybody had recognised the incoming machine as Dr. Whitehead Reid's S.E.5, the megaphone owned up to being wrong. This false alarm made spectators quite tense and when finally, eight minutes after scheduled time, a speck in the distance grew large enough to be recognised unmistakably as the Cygnet, there was a general sigh of relief.

The reason for their late arrival was that the pressure in their oil gauge had gone down and thinking that there was a leakage Mr. Chick landed at Biggin Hill only to discover that it was merely the gauge which was broken.

Pending the final decision of the Aero Club this definitely allotted the Sopwith-Sigrist Cygnet the First Prize, the R.A.E. Cygnet Second Prize, the Bristol Brownie Third Prize, and the Parnall Pixie the honour of being the only other competitor to fulfil the conditions of the Competition.

All four of these machines were fitted with the Bristol Cherub III engines, and none of these engines had been repaired or adjusted in the smallest detail throughout the Competition. This is a very great triumph for Mr. Roy Fedden, the designer of all the Bristol engines.

A Handicap Race for those machines eliminated during the Competition had been arranged by Mr. Goodman Crouch to start at 16.00 hours. The race was over two circuits of a course totalling 25 miles over Lympne, Postling, Hastingsleigh and Lympne. The First Prize was £50, the Second £25, and the Third £10.

Five machines took part in this race. The first away was the Cranwell C.L.A.4 (Bristol Cherub), piloted by Flt. Lt. Comper. The Supermarine Sparrow (Bristol Cherub), piloted by Mr. Biard started second, followed by the Avro Avis (Blackburne Thrush), piloted by Wing Cdr. Sholto Douglas, and the A.N.E.C. Missel-thrush (Blackburne Thrush), piloted by Lt.-Col. Henderson. After a slightly longer interval the Blackburn Bluebird (Armstrong-Siddeley Genet), piloted by Sq. Ldr. Longton, started from scratch.

When they rounded the Lympne turning point after their first lap C.L.A.4 was well in front, with the Sparrow second and the Avis and Bluebird a close third and fourth. The Bluebird passed the Avis a moment or two later. The Missel-thrush landed with plug trouble.

C.L.A.4 was an easy winner, with the Bluebird second and the Sparrow third. Col. Henderson, having changed the faulty plug, flew the Missel-thrush back and landed just after the finish.

While C.L.A.4 was circling round waiting for the other machines to land after the race its engine suddenly cut out, and it landed in a field the other side of the road and below the ridge. The ambulance, which had placed itself in a prominent position at the turning point on the aerodrome during this race, started off with alacrity towards the scene of a possible accident. Halfway *en route* its own engine cut out, probably in sympathy with its patient, so it trotted quietly home and left Flt. Lt. Comper to whatever fate might have befallen him.

However, it was later ascertained that luckily the C.L.A.4 had landed quite safely. The cause of the trouble was found to be a bluebottle which had entered by the air intake. Had it made its presence felt a few seconds earlier it would have cost the Cranwell Club £50.

By the end of the last race all the mist had cleared away, leaving a clear sky which promised fine weather for the Saturday's proceedings.—M. H.

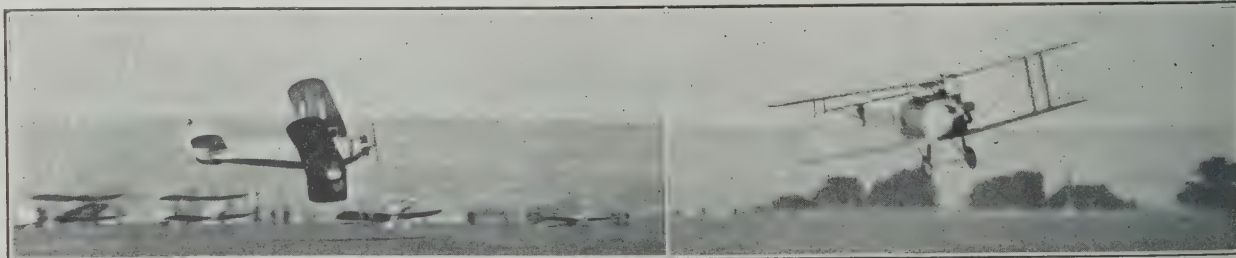
Spending the £3,000.

Within a few seconds of the arrival of the winning machine in *The Daily Mail* Competition at Lympne, Mr. Peattie of the Hawker Company started issuing invitations to a number of people to attend an informal dinner which the Company suddenly decided to hold to celebrate the result. Accordingly, at 8 o'clock some fifty or sixty people foregathered for one of the most entertaining impromptu functions one has ever known. The Hawker Company all through the Meeting had shown themselves to be wonders for organisation and certainly this hurriedly arranged dinner increased that reputation.

So informal was the gathering that Mr. Sigrist, who presided, instead of being Mister Sigrist, became Uncle Fred for the evening and the rest of the party were his nephews and nieces. Uncle Fred's first and only announcement was to the effect that there were to be no speeches and so it came to pass that those who had anything to say, chanted it in unison.

The long table was divided into sides, one half of which was presided over by Uncle Fred, and the other end by Mr. Peattie. Mr. Roy Fedden appeared to be the moving spirit at Uncle Fred's end and Flt. Lt. Chick occupied that position at Mr. Peattie's end. The remarks that were made were certainly amusing if somewhat pointed.

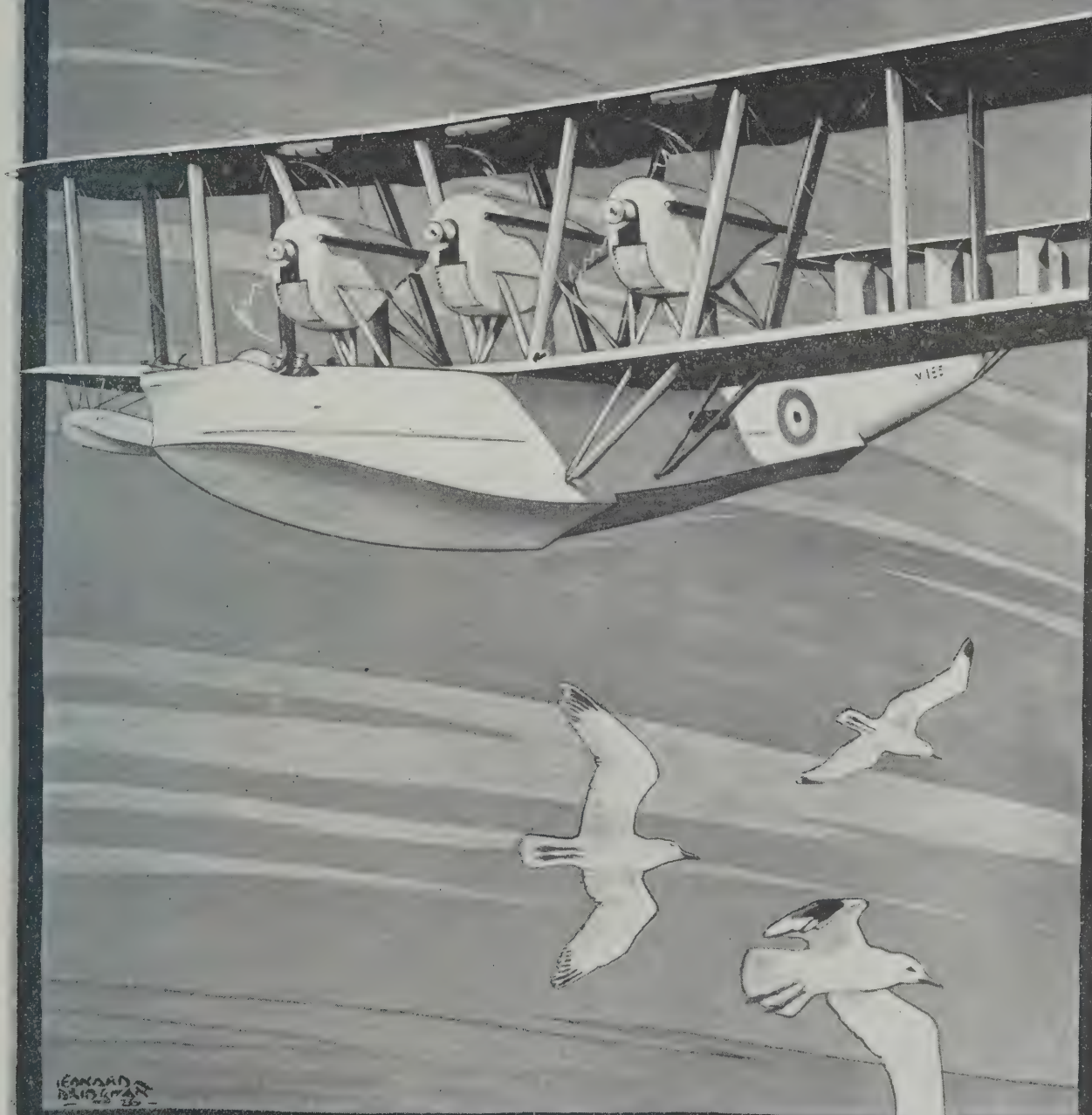
There was a weather forecast given in true B.B.C. style which stated that "a high compression area from the Azores was now



THE CUP WINNER.—Sq. Ldr. Longton on the Blackburn Bluebird (Genet) starting and flying in the Grosvenor Cup Race.

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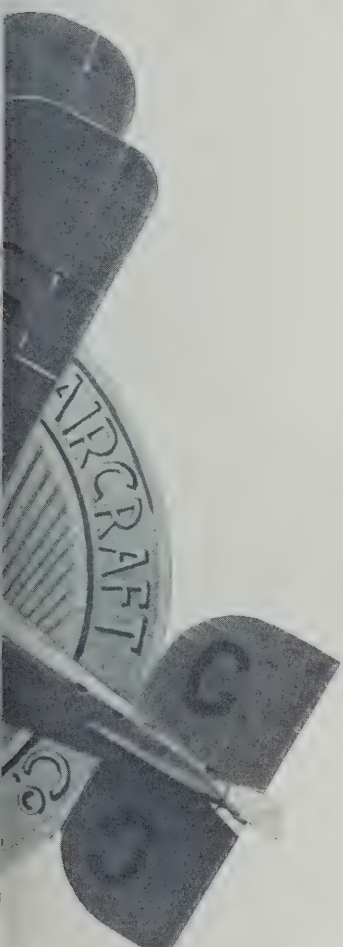


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ORRESPONDING WITH ADVERTISERS.

centred over Bristol and that the very big depression that usually lives over Iceland has been slowly moving south during the week and was now stationary over Coventry." Another one was an allusion to the fact that "two in a line are worth five in a bunch." Though one doubts whether these allusions are true generally speaking, they were certainly true during the Competition.

After the Dinner was over Uncle Fred sent out a scout and acquired a very good orchestra, from Heaven knows where. At the same time, Captain Charles Wilson and oneself were despatched to the Grand Hotel to call up all and sundry of those who had any connection whatever with the Meeting, and their womenfolk, and from then onwards until the early morning Uncle and Auntie Fred acted as host and hostess to a dance which went with more swing than any affair that one remembers, and reminded one rather of that well-known play, "Brewster's Millions." At any rate, everybody thoroughly enjoyed themselves and there was certainly a big inroad made into that £3,000.—G. D.

"The Daily Mail's" Dinner.

In accordance with precedent those assembled at Lympne in anything that could be considered an interested capacity were entertained to dinner at the Imperial Hotel on Saturday evening. *The Daily Mail* undoubtedly is a power in the land, and the dinner, and its service, were amazingly good, and were properly appreciated.

There were evidences that certain of the diners were in good spirits, but for an aviation banquet of this type the proceedings can only be described as decorous. From which it may be gathered that the dinner and the wines were good indeed.

The chair was occupied by the Lord Thomson of Cardington, Chairman of the Royal Aero Club, and Secretary of State for Air in the late Labour Government. He was supported on the one side by his predecessor and successor, Sir Samuel Hoare, and on the other by Mr.

Goudie, of *The Daily Mail*. He showed no sign of unduly lamb-like sensations, so presumably agreed with the writer as to the dinner.

After the Royal Toast, Sir Samuel Hoare expressed the official attitude of benevolence towards the light aeroplane, and expressed his appreciation of the efforts made now and in the past by *The Daily Mail* to encourage the sport of flying. The present Competition had led to results of great interest, and would make easier the task of the Air Ministry in encouraging private flying.

Some disappointment might be felt at the fact that all the prize-winners were machines two years old, but they must console themselves by reflecting that 1924 was evidently a very good vintage year.

The prizes were then presented to the fortunate entrants by the Lady Maud Hoare.

Mr. Goudie, of *The Daily Mail*, said that the efforts of *The Daily Mail* to encourage aviation might perhaps have been exaggerated. (A loud ejaculation of Hear, hear, was heard.) He was afraid the gentleman who agreed so thoroughly must be a competitor who had gained no prize. He could say that *The Daily Mail* was ready to continue its policy in this matter, and that any new development in flying that could be encouraged by them in the future could count on their support.

Sir Frank McClean gave the toast of Lord Thomson, and expressed the thanks of the Club to him for taking the chair.

In reply, Lord Thomson said that he was convinced that the future of this country would depend on Air Power, much as its past had depended on sea power. He thought he could claim that none of those present had noticed much change in the policy of the Air Ministry, either when he took over from Sir Samuel Hoare, or when Sir Samuel succeeded him. And he thought that in air policy party politics did not now enter and would not do so for a long time.—W. H. S.

THE GROSVENOR CUP RACE.

Somewhat the efforts of the Royal Aero Club remind one of that story of the Irishman who tried to be kind to a friend. "Hogan," said he, "I did a good turn for ye yesterday. Dempsey was blackguardin' ye and said that ye were not fit to feed with the pigs." "And what did ye do?" asked Hogan, "Hit him?" "No," said the friend, "I said ye were."

Somewhere towards the end of the Grosvenor Cup Race on Saturday evening, Sept. 18, when some few thousands of people in a good-class crowd were grumbling because they could not see the race, somebody remarked, "Upon my soul, these Aero Club people are not fit to run a cat fight." And somebody else said "You're wrong. That's about what they are fit for."

And when one recollected all the squabbling during the previous week over *The Daily Mail* Competition one realised that when the present incompetent crowd who run the Royal Aero Club have at last been succeeded by people who have some faint idea of popularising the sport of flying the present coterie might possibly make a living by running cat fights. But even if they did they would probably spoil the show by letting the cats fight under the judges' table.

The Grosvenor Cup Race on Saturday afternoon was the finest air race that has ever been held in this or in any other country. There were twenty-one starters. The handicapping was excellent. Although the finish was not so close as some finishes that one has seen, there was only a matter of a few minutes in 75 miles between the first half-dozen or so. The flying of everybody in the race was excellent. The cornering was superb. And the Royal Aero Club managed to make the whole thing as nearly invisible as possible to the vast crowds of people who had been lured to Lympne by specious promises.

The race started half-an-hour late. That was not very important. It was merely due to the fact that a number of excellent timekeepers, with calculating machines and split-second chronometers and slide rules and all kinds of gadgets, took several hours to hand over to the hardworking handicappers the lap times of a race which had been held during the morning. The natural result was that the handicappers could not possibly work out the proper handicaps for all the twenty-one competitors by the official starting time for the race. But when they had worked them out the result was very good indeed.

MIS-MANAGEMENT.

The reason why the race was a complete fiasco from the point of view of the public enclosure was that instead of arranging the course so that at the end of each lap the competitors flew the whole length of the front of the enclosure and turned at the end of it, as any ordinary racecourse pro-

prietor would have made them do, the Aero Club, with extraordinary ingenuity, placed the turning point diagonally across the enclosure right away in the far corner of the aerodrome so that the machines came into the aerodrome just as far from the crowd as possible, turned round the marked point and went out again after covering the minimum possible amount of aerodrome. Short of making the furthest corner of the aerodrome the actual turning point the race could not have been more skilfully concealed.

And the finishing line was arranged to run diagonally from the lowest corner of the public enclosure down to the aforesaid turning point. The result was that in finishing, the machines, instead of flying along the front of the crowd to the top end of the aerodrome, and then turning and flying back along the far side to land, just shot across the lower half of the aerodrome to the far side and then landed exactly where there were the fewest people to see them,—so that they never came near the bulk of the crowd at all.

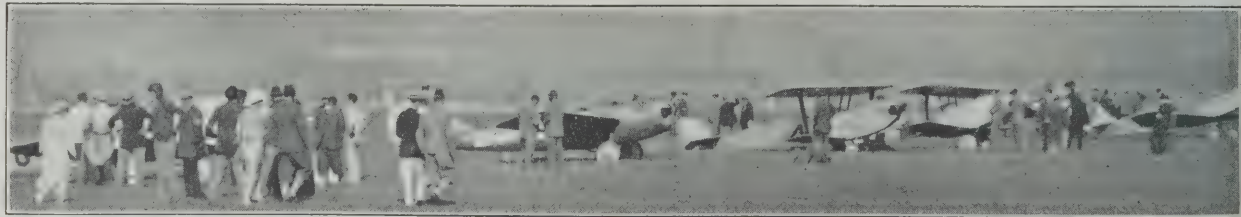
The official excuse for this blazing imbecility was that the slow machines on the limit marks had such a long handicap that the first few of them would be finishing their first 12½-mile lap just when the machines near the scratch mark would be starting. Consequently the idea was that as they came round on their first lap they should be able to turn where they would not be passing over the heads of other machines which were starting or just turning as the faster machines were getting off.

Apparently the idea of the Aero Club officials, who are becoming notorious for their lack of practical knowledge of aviation, was that machines tuned up for racing, and carrying barely enough petrol for the 75 miles would take the whole up-hill length of the aerodrome to get off, and would just scrape over the trees which fringe the cliff at the top end of the aerodrome, below which lies Romney Marsh.

AS IT WAS AND SHOULD HAVE BEEN.

What actually happened, as anyone with any common-sense could have foreseen, was that the machines got off up the hill against a comfortable little breeze with a run of 100 yards or so, and turned right round the marked turning point on almost exactly the same path which was flown by the long mark machines coming in after their first lap. Fortunately none of the machines that were turning happened to get in the way of those which were starting, but the turning point was placed just exactly where it would have caused such a mix-up if the starting and turning of two different machines had synchronised.

Any such chance would have been avoided if the turning point had been placed, as one has said, right at the top end of the aerodrome. In that way the machines which were



BEFORE THE START.—Sir Samuel and the Lady Maud Hoare inspecting the machines lined up for the Grosvenor Cup Race.

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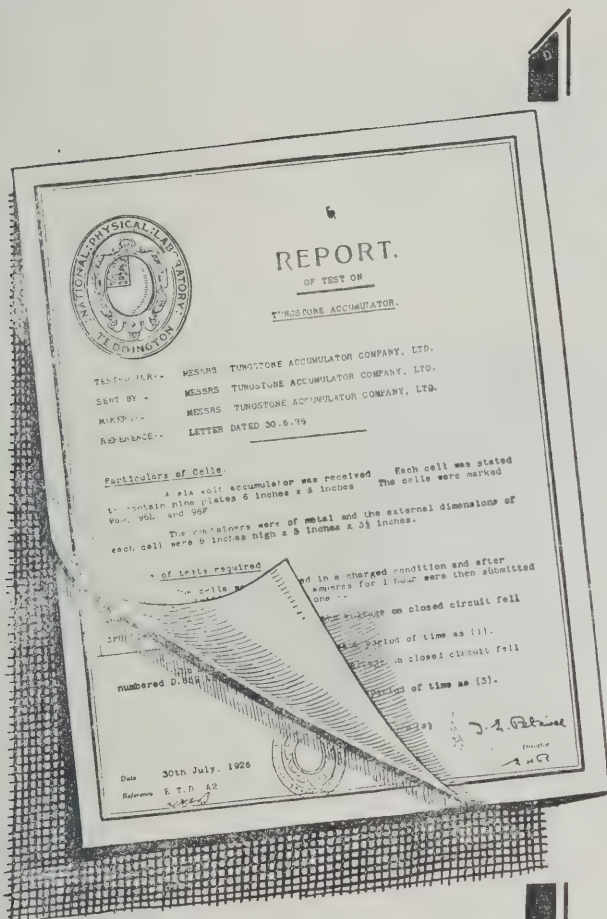
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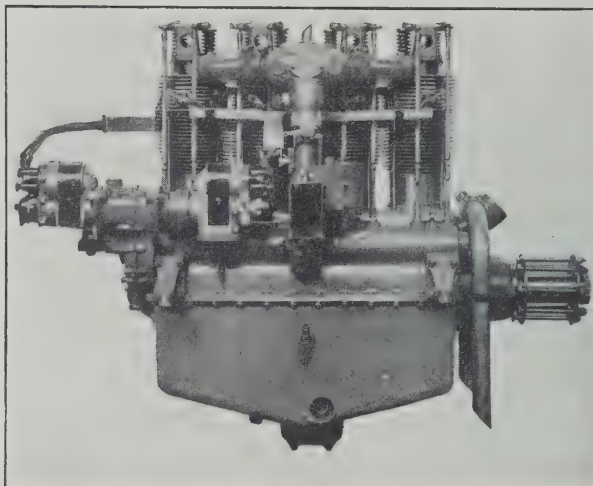


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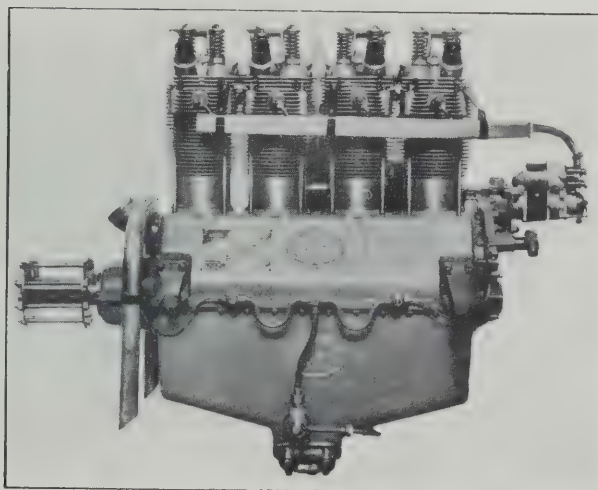
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DON, SURREY.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

taking off at the start would have turned half-way up the aerodrome and would have been heading out on the first leg of the course while the machines which were completing their lap would have been turning right up at the top end of the aerodrome where they would have been clean round and heading for the first leg of the course with a clear view in front and below them of any machines which might be starting.

About the last word in foolishness came from one of the higher officials of the Aero Club when the start for the last race of the day, the Open Handicap, was being arranged. Apparently realising, in a dim kind of way, that the Public had not had value for their money, and also his brain having been penetrated by the idea that the machines had not needed the whole length of the aerodrome to get off against the breeze in the Grosvenor Cup Race, he suggested that the starting line should be moved up the hill and laid at right angles to the public enclosures so as to give the crowd something of a view of the start.

But of course it never occurred to him that the wind had dropped in the meantime to almost a flat calm and that the machines would need quite an appreciably longer run than they had had in the previous race. This is the kind of alleged intelligence which runs these Aero Club meetings. And it may explain why such astonishingly silly things are done.

THE NEED FOR NEW ORGANISERS.

After the whole lamentable business was over somebody suggested that we shall never do any good with air racing or flying competitions in this country till some club sets up in opposition to the Aero Club. That unfortunately is impossible, although it represents the opinion of probably the majority of the people concerned with air racing, and certainly that of the majority of pilots.

The Aero Club holds all the trump cards. It is the representative of the Fédération Aéronautique Internationale, and therefore any pilot, or any would-be entrant of an aeroplane, who gets up against it merely has his racing licence cancelled and cannot compete in any international event and cannot have any records which he may set up homologated by the International Federation.

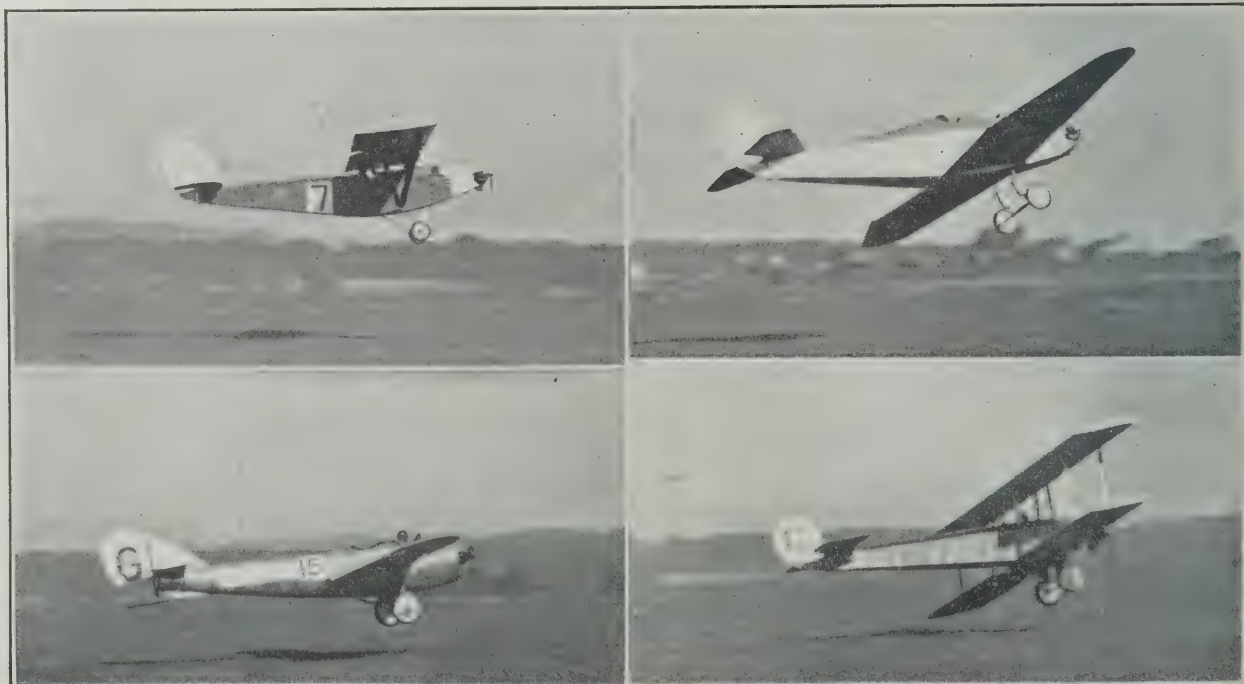
There is really only one remedy, that is for an air racing club to be started by people who know something about other forms of racing. Such a club could promote air racing as a purely commercial proposition, if it had the pluck, and all it would have to do would be to apply to the Royal Aero Club for permission to fly its races under Royal Aero Club rules.

So long as the people concerned with the club were respectable, so long as their money was good, and so long as they could show that they had reasonable knowledge of what was necessary for air racing, the Aero Club could not possibly refuse to permit them to hold races under R.Ae.C. rules. And the Air Ministry would see to it that the aerodrome at which the races were to be held was fit and proper for the purpose.

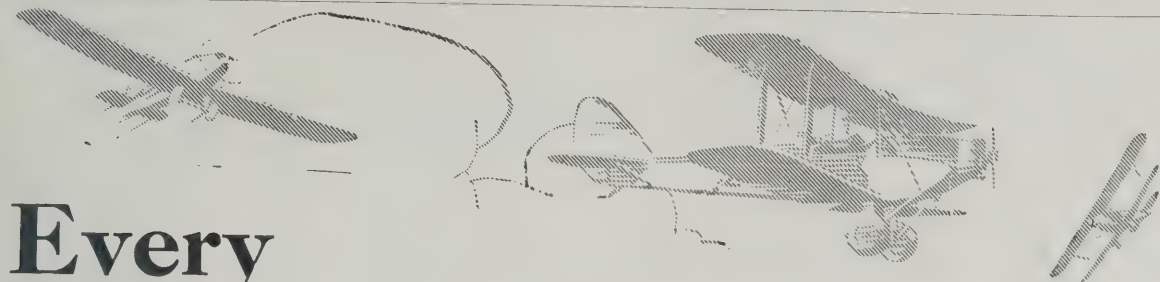
The first necessity about such a race meeting would be that the arrangement of the course and the running of the



THE FASTEST MACHINE.—Mr. L. P. Openshaw on the Westland Widgeon (Genet engine), who did fastest time in the Grosvenor Cup Race.



THE START FOR THE GROSVENOR CUP.—The Supermarine Sparrow, Cherub engine (Mr. Biard). The Parnall Pixie III, Cherub engine (Mr. Courtney). The Short Satellite, A.B.C. Scorpion II engine (Flg. Off. Boyes). The Avro Avian, Genet engine (Mr. Hinkler).



Every Race at Lympne Won on Shell

4 RACES
4 FIRSTS
2 SECONDS
4 THIRDS

By these sweeping triumphs at Lympne on September 18th, Shell Aviation Spirit once again demonstrated its supremacy.

Grosvenor Cup Won on Shell.

(Fourth year in succession.)

- 1st.** Mr. R. Blackburn's Blackburn "Blue Bird" (Pilot: Squad.-Leader W. H. Longton, D.F.C., A.F.C.)
- 3rd.** Mr. P. N. G. Peters' R.A.E. "Hurricane" (Pilot: Flight-Lieut. J. S. Chick, M.C., A.F.C.)

Lympne Open Handicap Won on Shell.

- 1st.** Mr. M. Harris' R.A.E. Aero Club Hawker "Cygnets" (Pilot: Flying Officer R. L. Ragg).
- 3rd.** Sir G. Stanley White's Bristol Brownie (Pilot: Mr. C. T. Holmes).

S.M.M.T. Handicap Won on Shell.

- 1st.** Sir William Letts' Avro "Avian" (Pilot: Mr. B. Hinkler).
- 2nd.** Sir G. Stanley White's Bristol Brownie (Pilot: Mr. C. F. Uwins).
- 3rd.** Mr. A. S. Butler's De Havilland "Moth" (Pilot: Capt. H. S. Broad).

Stewards' Handicap Won on Shell.

- 1st.** Flight-Lieut. N. Comper's C.L.A.4 (Pilot: Flight-Lieut. N. Comper).
- 2nd.** Mr. R. Blackburn's "Blackburn Blue Bird" (Pilot: Squad.-Leader W. H. Longton, D.F.C., A.F.C.).
- 3rd.** Com. James Bird's Supermarine "Sparrow II" (Pilot: Capt. H. C. Biard).

Fill up with Shell from the sealed Shell Pump.

SHELL

The Well-balanced Petrol



THE RESULTS OF THE RACES.

THE S.M.M.T. HANDICAP.

[FOR MACHINES WHICH COMPLETED HALF THE COMPETITION COURSE.]

| No. | Machine & Engine. | Pilot. | H'cap. | Speed. | Place. |
|-----|----------------------------------|--------------|---------|--------|--------|
| | | | m. s. | m.p.h. | |
| 3 | Bristol Brownie ... (Cherub III) | Uwins | 16-31 | 71.5 | 2nd |
| 14 | Parnall Pixie III (Cherub III) | Courtney | 13-08 | — | — |
| 4 | R.A.E. Cygnet ... (Cherub III) | Chick & Ragg | 11-34 | — | — |
| 9 | Avro Avian (Genet) ... | Hinkler | 5-28 | 90.2 | 1st |
| 2 | D.H. Moth (Genet) ... | Broad | Scratch | 94.87 | 3rd |

[NOTE:—The Sopwith-Sigrist Cygnet did not compete, as the engine had been stripped on Friday, for exhibition purposes, and the machines competing in this race were supposed to fly exactly as they flew in *The Daily Mail* Competition.]

THE LYPNE OPEN HANDICAP.

| No. or Mark. | Machine & Engine. | Pilot. | Handicap. | Speed. | Place. |
|--------------|-------------------------------------|-------------------|-----------|--------|--------|
| | | | m. s. | m.p.h. | |
| 4 | R.A.E. Cygnet (Cherub III) | Ragg | 17-40 | 78.2 | 1st |
| 14 | Pixie III (Cherub III) | Courtney | 16-46 | 75.25 | 2nd |
| 12 | Cranwell Biplane (Cherub III) | Walmsley | 16-34 | 75.1 | (7th) |
| G-EBJM | Brownie (Cherub III) | Holmes | 16-02 | 76.4 | (3rd) |
| 6 | Sopwith-Sigrist Cygnet (Cherub III) | Bulman | 13-09 | 82.1 | (6th) |
| G-EBHS | R.A.E. Hurricane (Cherub III) | Chick | 11-52 | 85.3 | (5th) |
| G-EBCA | S.E.5A (Renault) | Whitehead-Reid | 10-10 | 84.7 | (13th) |
| 9 | Avro Avian (Genet) | Hinkler | 7-30 | 97.8 | (4th) |
| G-EBMO | D.H. Moth (Cirrus II) | Sempill | 7-10 | 94.4 | (8th) |
| 2 | D.H. Moth (Genet) | Broad | 6-52 | 98.7 | 9th |
| G-EBCZ | Swallow (130 Clerget) | Watt | 1-09 | 114.9 | 11th |
| G-EBPD | S.E.5A (Viper) | Waghorn | Scratch | 119.7 | (12th) |
| G-EBPA | S.E.5A (Viper) | Mrs. Elliott-Lynn | Scratch | 120.7 | (10th) |

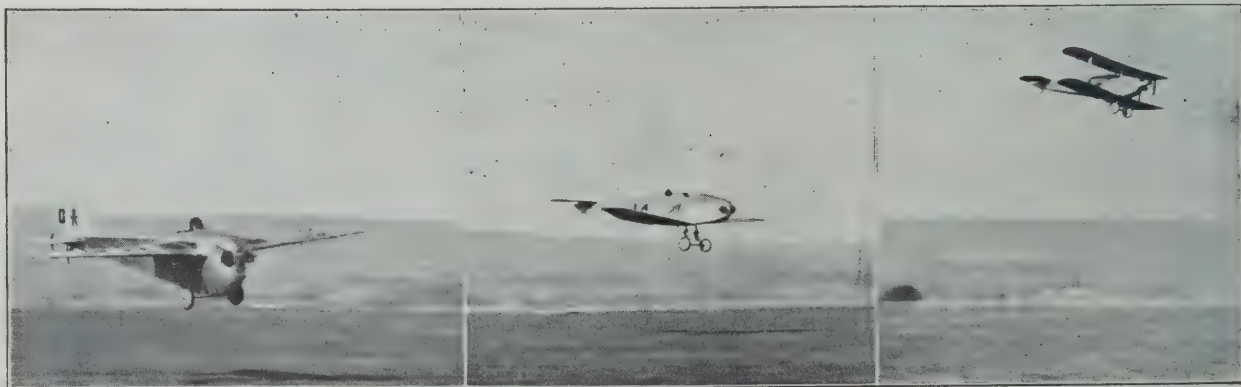
racers should not be touched by any single person who has hitherto been concerned with the mis-organisation and mal-administration of competitions by the Royal Aero Club.

Such a meeting might very well be held at Stag Lane by the London Aeroplane Club. But unfortunately the London Aeroplane Club is to all intents and purposes merely a by-product of the Royal Aero Club. Its operative side, as run by Mr. F. G. M. Sparks, could not be better. But its administration is done from the Royal Aero Club's premises in Clifford Street and naturally, if it tried to run a race meeting, the usual Aero Club coterie, which has made such an abject failure of all the race-meetings which it has run, would supply all the officials, with the usual result.

THE GROSVENOR CUP.

| No. or Mark. | Machine & Engine. | Pilot. | Handicap. | Actual Speed. | Place. |
|--------------|-------------------------------------|-------------------|-----------|---------------|----------------|
| | | | m. s. | m.p.h. | |
| 10 | Avro Avis | Douglas | 24-43 | 65.2 | — |
| 7 | Supermarine Sparrow II (Cherub III) | Biard | 23-43 | — | — |
| 14 | Parnall Pixie III (Cherub III) | Courtney | 19-12 | 75.18 | 2nd |
| 12 | Cranwell Biplane (Cherub III) | Walmsley | 15-59 | 74.3 | — |
| 4 | Cygnet (Cherub III) | Ragg | 15-59 | 73.7 | — |
| G-EBJU | Satellite (Scorpion) | Boyes | 15-15 | 74.4 | — |
| G-EBJM | Bristol Brownie (Cherub III) | Holmes | 14-31 | 75.9 | — |
| G-EBHZ | D.H.53 (Scorpion) | Perry-Keene | 14-31 | — | Crashed |
| 1 | Blackburn Blue Bird (Genet) | Longton | 13-06 | 84.95 | 1st |
| 6 | Cygnet (Cherub III) | Bulman | 13-06 | 81.3 | — |
| 13 | A.N.E.C. Missel-Thrush (Thrush) | Henderson | 13-06 | — | Retired |
| G-EBHS | R.A.E. Hurricane (Cherub III) | Chick | 11-46 | 84.79 | 3rd |
| G-EBMJ | Short Mussel (Cirrus Mk. I) | Parker | 9-53 | — | Forced landing |
| G-EBKT | D.H. Moth (Cirrus Mk. I) | Mrs. Elliott-Lynn | 8-07 | 82.3 | — |
| G-EBME | D.H. Moth (Cirrus Mk. I) | Hope | 7-53 | 87.2 | — |
| G-EBMC | Cranwell Monoplane (Cherub III) | Comper | 4-55 | — | Retired |
| G-EBNO | D.H. Moth (Cirrus Mk. II) | de Havilland | 4-55 | — | Retired |
| 9 | Avro Avian (Genet) | Hinkler | 4-25 | 96.22 | — |
| G-EBMO | D.H. Moth (Cirrus Mk. II) | Sempill | 3-28 | 92.8 | — |
| 2 | D.H. Moth (Genet) | Broad | 3-00 | 98.43 | — |
| G-EBJT | Westland Widgion (Genet) | Openshaw | Scratch | 105.5 | — |

Therefore if air races or air competitions are ever to be a success in this country some new man will have to come forward to do for the Sport of Flying what the late Richard T. Gates did for it at Hendon before the War.



THE PRIZE-WINNERS.—The three placed machines crossing the finishing line in the Grosvenor Cup Race. On the right—Sq. Ldr. Longton (Blackburn Bluebird, Genet engine), First. In the middle—Mr. Courtney (Parnall Pixie III, Cherub engine), Second. On the left—Flt. Lt. Chick (R.A.E. Hurricane, Cherub engine), Third.

LYMPNE, 1926.

The following 5 winning machines were
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£5,000 Competition.

- 1st Hawker "Cygnet," piloted by Mr. P. W. S. Bulman.
- 2nd Hawker "Cygnet," piloted by Flt.-Lt. Chick and Flg.-Off. R. L. Ragg.
- 3rd Bristol "Brownie," piloted by Mr. C. F. Uwins.

The Stewards' Handicap.

- 1st C.L.A.4, piloted by Flt.-Lt. N. Comper.

The Lympe Open Handicap.

- 1st Hawker "Cygnet," piloted by Flg.-Off. R. L. Ragg.

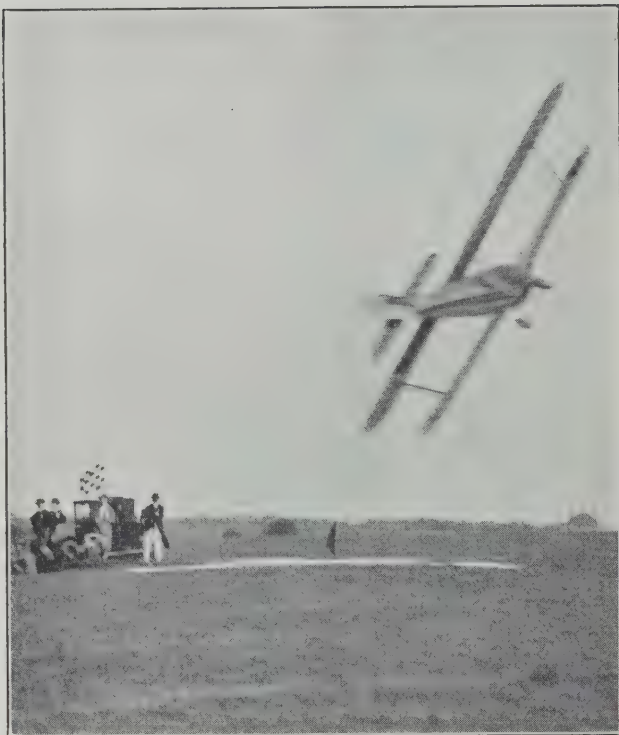
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THE SERVICE TOUCH.—Fig. Off. Linton Ragg on the R.A.E. Cygnet, turning in the Grosvenor Cup Race. Sir Samuel Hoare, in white trousers, is seen by the mark.

Perhaps the various meetings which are being held by the Manchester Club and the Newcastle Club and the Yorkshire Club will find the man for us. But the one thing certain is that no such man exists in the Royal Aero Club.

THE END OF THE MEETING.

As for the rest of the doings on Saturday, the first race was that for the Prize presented by the Society of Motor Manufacturers and Traders Ltd. open only to machines which had flown half the course in *The Daily Mail* Competition. The results will be found in the table herewith.

Of the Grosvenor Cup Race itself it is only necessary to congratulate Sq. Ldr. Longton on winning the Cup for the second time. He flew a splendidly-judged race on the attractive little Blackburn Bluebird, proving that the machine which was the first to be turned down by the Stewards of the Royal Aero Club in *The Daily Mail* Competition is really a first-class flying machine, and that the Genet engine can give a fine turn of speed. The Westland Widgeon also proved the power of the Genet by making over 100 m.p.h., and fastest time.

Mr. Courtney, who was second, and Flt. Lt. Chick, who was third, also flew remarkably well. And the fact that three such well-tried pilots should take the first three places shows that there is a great deal in piloting, whatever may be the luck of the handicap. The various studies in cornering which illustrate this issue may serve to show that the skill of other pilots who were not placed was up to the highest standard.

After the Grosvenor Cup Race came the Lympne Open Handicap which also produced some good flying. But by that time most people were rather bored with standing packed in a crowd watching a few machines flip round the far corner of the aerodrome. And so little interest was taken in it.

Many of the pilots flew in all three races, and two of them, Mr. Uwins and Mr. Courtney, had flown right through *The*



RIVALS AGAIN.—Flt. Lt. Chick, this time on the R.A.E. Hurricane monoplane, contesting the turn with Mr. Bulman on the Sopwith-Sigrist Cygnet.

Daily Mail Competition as well. Truly our pilots are hardy. Before, and during and after the Competitions various and sundry R.A.F. machines entertained the crowd. A formation of Grebes did some very neat work. A pilot on a Woodcock did some good aerobatic flying and another pilot on a Gloucester Gamecock did a long descent upside-down, including something very like a falling leaf performance, which was one of the best bits of upside-down flying one has seen.

Quite a number of non-competing machines visited the aerodrome. Sir John Rhodes and a friend came over on his Moth from Stag Lane. Mr. Phillippo of the Cornwall Aviation Company flew over from Brighton accompanied by Mr. Herman Volk and Mr. Dennis Junior of Guildford, who seems to take quite as much interest in aviation as he does in lorries. Mr. Adams, also of the Cornwall Company, came over from Margate.

Altogether there were more civilian aeroplanes on the ground at Lympne than have ever been gathered together in this country before. There were in fact more aeroplanes on the ground than there were motor-cars to see the finish of *The Daily Mail's* £5,000 Competition.

When they were all strewn about higgledy-piggledy at the lower end of the sheds it quite reminded one of what was called "Hell's half acre" at the Pulitzer Trophy Meeting at Dayton, Ohio, two years ago. We are almost as far advanced in Civil Aviation as the Americans were then.

Altogether Saturday night might have been quite an entertaining day at Lympne if by some miracle the officials of the Royal Aero Club had been suddenly imbued with a little common sense.—C. G. G.



A DUET.—The Cranwell C.L.A.4—Flt. Lt. Walmsley (12), and the R.A.E. Cygnet—Fig. Off. Linton Ragg (4), starting together in the Grosvenor Cup Race.



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Extract from :-

OFFICIAL  REPORT.

Parliamentary Debates

HOUSE OF COMMONS.

VOL. 192, No. 18. THURSDAY, 25th FEBRUARY, 1926

"The SECRETARY of STATE for AIR (Sir Samuel Hoare):

Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing.

Lieut.-Commander BURNEY: With full service load.

Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance, of about 800 miles, spending as much as 12½ hours continuously in the air

LENGTH OVERALL ... 50'-7"

HEIGHT OVERALL ... 17'-3"

SPAN (SPREAD) ... 86'-6"

SPAN (FOLDED) ... 44'-3"

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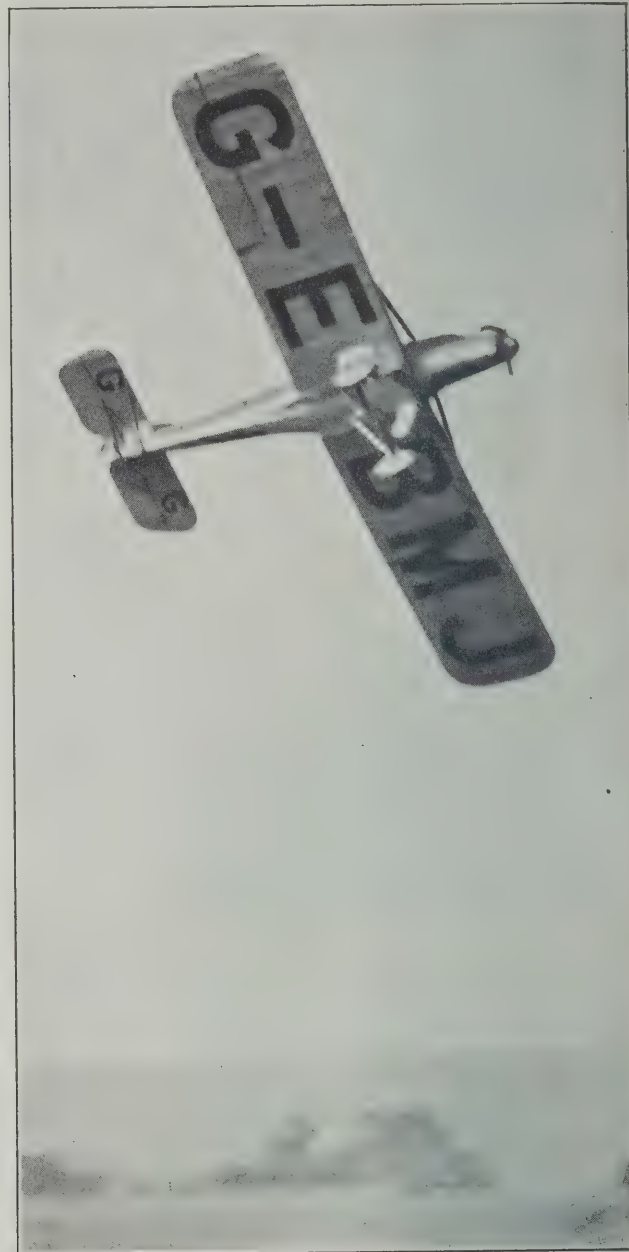
KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



A FAMILY AFFAIR.—Studies of Col. the Master of Sempill and Mrs. Sempill cornering in the Grosvenor Cup Race on the red-and-white Moth which won the King's Cup Race. The machine now has a Cirrus Mark II engine and a much improved performance.

MAKING THE WINNERS WIN.

In practically all cases the various petrols, oils, dopes, etc., used by the winners of the different events will be found in the advertisement columns of *THE AEROPLANE*. However, to do justice to those who prefer to hide their particular form of light under a bushel, hereunder comes the list of accessories before and after the fact.



CORNERING.—The Short Mussel (named after Mussel Manor, Isle of Sheppey, where the Short Bros. aeroplane business began), piloted by Mr. Lankester Parker, flying in the Grosvenor Cup Race.

The winner of *The Daily Mail* £3,000 prize, Mr. P. W. S. Bulman, used B.P. Spirit. His engine ran perfectly throughout the 2,000 mile contest and the subsequent races. Mr. J. C. C. Taylor (late Captain, R.A.F.)—who is seen on the cover picture hard at work as usual—is to be congratulated on his first big success since he joined the B.P. Company this year.

The Cherub engine was lubricated with Castrol. Every single runner in every single event at Lympne used Castrol



A SPORTING EFFORT.—The Cranwell biplane, C.L.A.4 (Cherub engine) being flown by Flt. Lt. Walmsley in the Grosvenor Cup Race.



Aeroplane Magnetos

are again successful
at

Lympne

The Grosvenor Challenge Cup

won by the Blue Bird fitted with a B.T.H. Magneto.

the second successive year this cup has been won
by a machine equipped with a B.T.H. Magneto.

Society of Motor Manufacturers and Traders Competition

won by the "Avro Avian" fitted with a B.T.H. Magneto.

fit B.T.H. —

the Trouble-Proof and Trophy-Winning Magneto.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

as usual, and so every other event was also won, seconded and thirded on Castrol. Sir Charles Wakefield therefore still Cheers.

Cellon Dope was used also on Mr. Bulman's machine, and on the second and third machines.

And as usual K.L.G. plugs and Smith's instruments were used.

The second and third machines in *The Daily Mail* prize used Shell Spirit, as also did Sq. Ldr. Longton's Blackburn Bluebird, which won the Grosvenor Cup, Flt. Lt. Comper's C.L.A. 4, which won the Stewards' Handicap, Mr. Hinkler's Avro Avian, which won the S.M.M.T. race, and Flg. Off. Ragg's Cygnet, which won the Lympne Open Handicap.

This fine list of wins is of course due entirely to Mr. Jerry Shaw and his hard-working aides, Mr. Startup, Mr. Thom, and Mr. Brie, to whom must be added Mr. Bennett.

The only other man home was Mr. Courtney and he used Pratt's, as also did Mr. Openshaw, who, on the Westland Widgeon, made the fastest time in the Grosvenor Cup race.

Pratt's chief representatives were Mr. Henry Tegner and Mr. Plevins, whom many people met for the first time. All who met them will hope that they will continue to grace aviation meetings with their cheerful presences.

Mr. Hewlett, the Pratt representative at Croydon, was of course very much to the fore all the time, and worked in his usual energetic manner.

Every winning machine so far as one could gather was sparked by a B.T.H. magneto, and so far as one is aware no other type of magneto was worn by anyone.

Of course, Palmer tyres were the only ones seen on the aerodrome. One is told that another firm is making aircraft tyres, but so far they have not obtruded themselves on one's notice.

Mr. Adams, of Bray, Gibb and Co., insurance brokers, without whom no flying meeting is complete, was constantly at the aerodrome to see the machines he insures. Capt. Lamplugh and Col. Rabagliati, of the British Insurance Group, also watched the proceedings with anxious eyes and ears, but became less tense as the proceedings wore on and nobody showed signs of being written off in spite of having been under-written.

When one sees this list of those who assist the winner one realises what an amount of commercial foresight and organisation is needed to pull off a big competition, especially when it is run by the Royal Aero Club.—G. D.

LESSONS FROM "THE DAILY MAIL" COMPETITION.

By W. H. SAYERS.

The essential figures of the results achieved by all the machines which took an active part in *The Daily Mail* Competition at Lympne are given in this issue in tabulated form, and from these it should be possible for those interested to draw almost any number of conclusions concerning the inherent merits of the machine concerned—or as to the value of the Competition itself as means of encouraging really useful economical light aeroplanes.

One point, however, may be said to stand out very clearly, and that is the really amazing technical results which British aircraft and engine designers can produce when sufficient inducement is afforded them. In this instance a very strong inducement to fly with the minimum possible expenditure of fuel was afforded. From the private owner's point of view the difference between the most economical and the least economical machine at this meeting in terms of cost per mile is probably quite immaterial, but in other types of aircraft fuel economy may be of very great importance and it is certainly of great technical interest.

The "figure of merit" of 2,203 pound-miles per pound of fuel attained by the winning Cygnet is the equivalent of approximately 7½ ton-miles per gallon of petrol, and this was achieved at a speed over all of 65 m.p.h. The load carried by this machine is the equivalent of two heavy passengers and 140 lbs. of luggage—a good load for the normal two-seater car. If a two-seater car with this load can average 32 m.p.h. and 30 m.p.g. it will do remarkably well, and its "figure of merit" will then be only about 1,700. In other words, it will use 25 per cent. more fuel to cover the same distance at half the speed.

If one translates the fuel figures into the usual motoring units of miles per gallon, it is found that the Cygnet made 39.2 m.p.g. overall—which must represent something well over 40 m.p.g. when allowance is made for distance flown in excess of the official distance—and for fuel used in starting and running up. Quite certainly no car can equal this and maintain anything like 65 m.p.h. in comparable conditions. This machine used 12.7 lbs. (1 2/3 gallons) per hour on the official time of flight, and therefore can scarcely have taken an average of more than 20 h.p. from its engine. If it is possible—as it obviously is—to average 65 m.p.h. in a fair sample of British weather with a loading of 45 lbs. per cruising b.h.p., it seems fairly obvious that very considerably more economical commercial aircraft than any yet produced can be made as soon as there is an adequate incentive to do so.

The figures for the winning Cygnet might perhaps be considered to be so abnormal that they do not represent results which can certainly be obtained, and the fact that the R.A.E. Club's Cygnet—which finished second—has a notably lower "figure of merit" might be taken to confirm this view. This actually is not quite the case.

The second Cygnet used only 10 lbs. (or 1 1/3 gallons) more than the winner for the same distance. The drop in the "figure of merit" is therefore mainly due to the fact that this machine carried nearly 90 lbs. less useful load than did its sister. This difference is mainly accounted for by the fact that the R.A.E. Club did not succeed in obtaining a C. of A. for their machine at so great a loaded weight as did Messrs. Sopwith and Sigrist, and were not quite so certain as the latter concerning their fuel consumption and consequently carried rather more fuel—which does not count as useful load. Also one believes that their Fairey-Reed airscrew was a general purposes design and not an economy one.

The second Cygnet's over-all average speed was notably less than the winner's. This fact is in all probability mainly due to a difference in airscrew characteristics, combined with similar opportunities for testing out machine, engine and airscrew to discover the best cruising speed. It is also possible that being of limited financial resources the R.A.E. Club felt under a compulsion to take no risk of damaging their engine. At any rate, when they were certain of their £1,500 of prize money the R.A.E. Cygnet was permitted to display a very decided turn of speed in Saturday's races.

The fuel consumptions of the other two machines to complete the course were 13 and 50 lbs. (say 1½ and 6½ gallons) greater than the winners. Thus it can be said fairly safely that there is for practical purposes nothing to choose between the four machines on the fuel consumption basis. All four weigh between 850 and 1,000 lbs., averaged between 56 and 65 m.p.h., and covered between 40 and 35 miles per gallon over a week's hard flying. Thus it may fairly be assumed that for machines of the same general class—of similar load capacity and with equally efficient engines of the same power—the leading British designers can all produce an equally efficient light aeroplane.

It must not be forgotten that all these four machines actually used the same type of engine—the Bristol Cherub III—and that the very remarkable consistency in fuel consumption, combined with an equally consistent reliability under far from ideal conditions is a quality of the Cherub engine without which these results could never have been achieved.

Here it may be noted that immediately Mr. Bulman had completed the formalities of measuring fuel, etc., at the close of his last lap on Friday Mr. Redden had the engine removed from his machine, stripped it in public and exhibited the components to all and sundry interested. Its condition was as nearly perfect as can be conceived and without even grinding in the valves the engine was reassembled and erected in the machine.

Comparison of the performance of the machines which started, but did not finish in the Competition, either between themselves or with the first four, is neither easy nor very reliable.

The Seven Club's Westland Woodpigeon is on total weight and total h.p. in the same class as the four Cherub-engined machines which finished. But owing to the unsatisfactory airscrew forced upon it the fuel consumption was abnormally high, and it actually flew one more lap of Tuesday's course than was officially timed.

Under very adverse conditions the Woodpigeon covered about 25 m.p.g. at a real average of about 60 m.p.h.—a consumption which scarcely need worry anyone likely to be able to afford any kind of private aircraft.

The only other machines from which any useful data can be extracted are the Avro Avian and the D.H. Moth. Both these had the same engine—the Armstrong-Siddeley Genet.

Considering how short a time has been available for practical experience of this engine in the air, that both these competitors should have suffered from engine-teething troubles is scarcely surprising, and there can be little doubt even now that the Genet as it would be used by any sensible private owner (that is with dual ignition and without one or two of the other devices used to keep its weight within the Competition limit) is a thoroughly good engine.

On the 1,282 miles flown by the Avian, Mr. Hinkler's "figure of merit" very nearly equals that of Mr. Bulman and it is conceivable that had the Avian not dropped out it might have approached the winner more closely. Mr. Hinkler was in fact carrying out consumption trials during the contest, and is said to have been steadily improving as time went on.

Taking this fact in conjunction with the very great probability that the Genet itself can be persuaded to give a decidedly better cruising consumption when a reasonable amount of experience with it has been acquired, it seems that the Avian is capable of equally the Cygnet figure of 7½ ton-miles per gallon at a distinctly higher cruising speed.

The Avian is therefore an amazingly efficient aeroplane, not only on the basis of her total power loading, but even more so in the matter of the ratio of load carried to total weight. Presumably the Avian as a training or sporting machine was designed to have a fully aerobatic C. of A. with an all up load of round about 1,300 lbs., and the C. of A. for 1,600 lbs. upon which she entered in this contest was acquired with the "figure of merit" in view.

Certainly her load capacity might be used to carry large supplies of fuel for long distance work, but otherwise her Competition load could scarcely be packed into her in any other form than that of lead weights. But this capacity—even if it can rarely be used—means that the Avian in normal use will have an even greater power reserve than she displayed at Lympne. And as she was far from being under-powered then, she will certainly not overwork her engine in normal conditions.

As a technical achievement the Avian's weight figures are—one believes—entirely unprecedented. Her load (including pilot and fuel) is 130 per cent. of the empty weight. Certain foreign aircraft constructors claim to achieve a load equal to empty weight, and it is fairly certain that the starting weight of the French machines which have recently achieved non-stop flights of 2,000 miles or more must have reached—or even exceeded—twice the empty weight. But it is fairly certain that none of these machines would have obtained a British C. of A. for such a load, and it is obvious that the Avian—for record making purposes—could get off and fly with a lot more load than was carried.

When this load capacity is taken in conjunction with the really remarkable speed of nearly 95 m.p.h., developed in Saturday's racing, the Avro design staff may well feel pleased with their most recent production.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

To compare the performance of the D.H. Moth—also fitted with the Genet engine—with that of the Avian in the Competition, it has to be remembered that the Moth was designed with no eye to "figures of merit" and for an engine of type and characteristics totally different from that which had to be fitted to comply with the rules.

As a result the Moth was unable to take full advantage of the reduced weight of the Genet to increase her useful load. Moreover, her economical cruising speed is pretty certainly higher than it would have been had she been intended to beat the "figure of merit" formula. For practical purposes the fact that the Moth has a higher wing loading and a higher economical speed is no disadvantage, but for this meeting it doubtless was.

From the private owner's point of view both Avian and Moth will carry two, a reasonable amount of luggage and fuel for as long a flight as he is likely to want to make without landing.

Their over-all average speeds cruising will be nearly the same in practice about 75 m.p.h., the Moth being a little the faster. The Avian covered 1,282 official miles in the meeting for 67 gallons of petrol, the Moth 1,386 miles for 78 gallons, or at the rate of 19 m.p.g. for the Avian and 18 m.p.g. for the Moth. There is obviously little in the matter of fuel economy between these two as private tourists, despite the wide divergence of their "figures of merit."

What good has the Competition done? It has provided useful information, but nothing like so much as it would have done had the eliminated not been eliminated. It has shown that four light aeroplanes combine a remarkable fuel economy with a surprising degree of reliability and general airworthiness.

It has very effectively concealed the capacity of the eliminated entries by preventing them from carrying out the tests, and it has—one must hope—at least proved even to the Aero Club that complicated rules which cannot possibly be so all-embracing as to cover every possible emergency, cannot be interpreted arbitrarily at short notice without leading to ludicrous results.—W. H. S.

"THE AEROPLANE" BY AIR.

Through the kindness of the De Havilland Company THE AEROPLANE was delivered by Moth to Lympne on Wednesday last week. Although the distance from London to Lympne is only 60 miles the papers arrived 50 minutes earlier than did those despatched at the same time by train and fast car. *Verb sap.*

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Sept. 19.

The total flying time for the week was 36 hrs. 5 mins.

The following members were given flying instruction:—Mrs. S. C. Elliott Lynn, Lady Bailey, R. L. Portway, R. A. St. John, H. Solomon, A. J. Richardson, B. B. Tucker, H. P. Wight, D. Usher, Miss O'Brien, J. Barros, J. S. Boulton, M. P. Susman, Lady Douglas-Hamilton, H. R. Presland, H. Flintoff, G. Vlasto, J. C. Elford, G. Black, L. C. Crammond, G. C. Bonner, D. P. H. Esler, G. E. Clair, O. J. Marstrand, F. Clarkson, Miss Fletcher, E. Cooper, G. Eady, L. J. C. Mitchell, S. O. Bradshaw, M. Jones.

The following members flew solo:—Lady Bailey, A. H. M. Lees, L. J. C. Mitchell, A. H. Dalton, R. Malcolm, E. G. Richardson, N. J. Hulbert, N. Jones, O. J. Tapper, E. D. Moss.

The following associate members were given joy-rides:—A. Southgate, A. L. A. Petty, Mrs. M. Bell, E. Anderson.

The Lancashire Aero Club.

Report for week ending Sept. 17.

Typical Manchester weather has made flying difficult during the greater part of the period.

Total time for week 17 hrs. 10 mins., made up as follows:—Dual with Mr. Stack:—Costa, 1 hr. 55 mins. S. Smith, 1 hr. 30 mins. Nelson, 1 hr. 10 mins. Hughes, 1 hr. 10 mins. Birley, 1 hr. Moss, 30 mins. Dyson, 25 mins. Hampson, 25 mins. Woods, 20 mins.

Solo:—Agar, 1 hr. 10 mins. Goodfellow, 1 hr. 5 mins. Pitman, 1 hr. 5 mins. Williams, 50 mins. Leete, 35 mins. Michelson, 35 mins. Lacayo, 30 mins. Parker, 15 mins. Hampson, 15 mins.

Joy-rides with Messrs. Goodfellow, Scholes and Stack:—Miss Goodfellow, 25 mins. Mrs. Thorpe, 30 mins. Williams, 20 mins.

Tests occupied 1 hr. 30 mins. Machines in use I.R. and MQ (Moths), and OK (Avro).

Between thirty and forty entries have been received for the competitive events of the Club's second Flying Display, which starts at 2.30 p.m. prompt next Sunday, the 26th.

The traffic and parking arrangements have been greatly improved and arrangements have been made to supply a limited number of luncheons for the benefit of spectators arriving early with their cars in order to make sure of a good position in the aerodrome car park.

We note with pleasure that Yorkshire intend to take back with them the silver tankards for the Inter-Club Relay Race. This event will be flown in heats and a Lancashire-Yorkshire final would be very popular with the crowd. One has no doubt, however, that whoever wins them will have to fill them before being allowed to depart.

The Midland Aero Club.

Report for week ending Sept. 18.

Total flying time for the week 13 hrs. 25 mins.

The following members received flying instruction:—H. Willis, J. Brinton, S. H. Smith, C. Burrows, H. Smith, O. L. Richards, A. Gibbons, H. Beamish, R. L. Jackson, E. J. Brighton.

The following members made solo flights:—W. Swann, E. J. Frighton, G. Perry, R. L. Jackson, H. Willis, and C. L. Knox, all of whom are "A" pilots.

Only one machine has been in use as EBLW is undergoing annual inspection for renewal of Certificate of Airworthiness.

The Hampshire Aeroplane Club.

Report for week ending Thursday, Sept. 15.

Total flying time, 16 hrs. 10 mins. Instructional flying, 14 hrs. Passenger flying, 2 hrs. 10 mins.

The following members received instruction:—Mr. Heathcote 1 hr. 35 mins., Miss Home 1 hr. 25 mins., Messrs. Bumble 1 hr. 15 mins., Dobson 1 hr. 25 mins., Perfect 55 mins., Molony 40 mins., Everett 45 mins., Lt. Graham, R.N., 35 mins., Messrs. Dartnall 30 mins., Bishop 25 mins., Dickson 25 mins., Bound 20 mins., Fowler 20 mins., Courtney 20 mins., Rodger 15 mins., Sommer 15 mins., Kerry 20 mins., Keeping 20 mins., Bowen 15 mins., Fry 15 mins., Cooper 15 mins., Morley 10 mins., Shepherd 20 mins., Mansbridge 20 mins.

The following members had passenger flights:—Miss Wyllie, Mrs. Haines, Miss Woodford, Mrs. Fry, Miss Harvey, Miss Heathcote, Miss West, Mr. Kennerley-Rumford.

Mr. O. E. Simmonds put in 45 mins. solo flying.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Sunday, Sept. 19.

Total time for the week, 31 hrs. 55 mins., made up as follows:—Dual, 21 hrs. 35 mins. Solo, 10 hrs. 10 mins. Passenger with Mr. Parkinson, 30 mins.

All the above flying on I.X. On two days during the week flying was impossible owing to strong winds.

The following members flew under instruction with Mr. Parkinson:—Sir Joseph Reed, Mrs. Marcks, Miss Leathart, Messrs. H. Ellis, E. C. Kennedy, J. M. Kennedy, Matthews, Irving, Whitfield, Middleton, Somerville, Thirlwell, Charlton, Gilmore, Turnbull, Miesegae, C. Thompson (advanced dual), Palmer, Bruce.

Solo:—Mr. Baxter Ellis with Mr. Keenan. Mr. R. N. Thompson with Mr. E. Collins, Miss Crossley, Mr. T. Bell and Miss Bell. Dr. Dixon with Mr. T. T. Davidson, Mr. Percy, Mr. Mason, Dr. Toward, Mr. White, Mr. Smith, Mr. Chalton, Mrs. Bell, Miss Howard, Miss Atkinson and Mr. J. Bell. Mr. P. H. Phillips with two passengers whose names have not been reported.

The following flew as passengers with Mr. Parkinson:—Mr. Thompson and Mr. Bishop.

Both machines will be at the Lancashire Club's Meeting on Sunday next. Some members had designs upon the four tankards, and are very much disappointed to learn that these will be collected by the Yorkshire Club.

Everyone wishes the Lancashire Club success, with suitable weather.



PERSONALITIES AT THE NEWCASTLE MEETING.—Left to right, Mr. R. N. Thompson explains how he won the Members' Race. The Rivals, Mr. Parkinson and Mr. Sparkes declare an Armistice. Dr. H. L. B. Dixon possesses the Cup for the Inter-Club Members' Race.



Proof of **PRATTS** **SUPREMACY**

Newcastle

President's Cup, Inter-Club Members' Scratch Race and Bomb-Dropping event, at the Newcastle Aero Club's Meeting—all won on Pratts.

Leeds

York Aero Challenge Cup won at the Leeds Aerial Pageant by Mr. J. Parkinson, flying a D.H. Moth (27/60 h.p. Cirrus engine), entered in Pilot Instructors' Race.

Kings Cup 1926

**WON
ON PRATTS**

by De Havilland (Moth) 27/60 h.p. "Cirrus" engine, piloted by Capt. H. S. Broad, entered by Sir Charles Wakefield, Bart.

Pratts

*Best
on Test*

THE ROYAL AIR FORCE.

The London Gazette.

GENERAL DUTIES BRANCH.—The following Plt. Offs. are promoted to the rank of Flg. Off.:—L. R. Mixen (Apr. 15); R. G. M. Hill (Sec. Lt., London Regt., T.A.) (May 15); D. C. Sherman, E. G. D. Stewart, M.C., T. P. F. P. Fagan (Aug. 6); A. J. Holmes, C. P. Vines (Aug. 17); R. D. Adams (Sept. 17). Flg. Off. S. H. Hardy is placed on half-pay, Scale B (Sept. 16).

The following are transferred to the Reserve:—CLASS A.—Sq. LDR.—C. A. Rea, A.F.C. (Sept. 12). FLT. LTS.—W. W. McConnachie, T. Rose, D.F.C., R. A. Vosper (Sept. 12); A. M. Blake, A.F.C., P. H. Davy (Sept. 16). FLG. OFFS.—H. A. Boniface, R. G. Mullette, H. E. F. Saunders (Sept. 12); J. V. Medcalf, P. L. Sant (Sept. 16).

CLASS B.—FLT. LTS.—R. C. Bryant, W. H. Oakey, M.B.E. (Sept. 12); D. K. Cameron (Sept. 16). FLG. OFFS.—J. L. Miles, H. W. Nicholl (Sept. 12).

CLASS C.—FLT. LTS.—B. C. Adamson, D. W. King (Sept. 12); C. W. Bailey, F. R. P. Dexter (Sept. 16). FLG. OFFS.—H. E. Kirk, D.C.M. (Sept. 12); E. J. Moule (Sept. 16).

STORES BRANCH.—Flg. Off. W. F. Langdon is granted a perm. comm. in this rank with effect from Nov. 24, 1925, on completion of probationary service; Sq. Ldr. W. H. G. Maton, M.B.E., is placed on the retired list (Sept. 11).

The following are transferred to the Reserve (Sept. 12):—CLASS B.—FLG. OFF.—W. A. Kyte, CLASS C.—Sq. LDR.—H. G. Etheridge. FLG. OFFS.—H. D. Fletcher, W. B. Francis, H. C. Haywood-Gibbons, E. W. Husband, J. B. Slater, J. S. Viner.

ACCOUNTANT BRANCH.—The following Flg. Offs. are granted perm. comms. in this rank (Sept. 15):—E. C. Green, J. H. S. Richards. Plt. Off. on probation F. Rigby is confirmed in rank and promoted to the rank of Flg. Off. (Aug. 10); Flg. Off. A. H. Scaife is placed on the retired list on account of ill-health (Sept. 15).

MEDICAL BRANCH.—Flg. Off. A. Harvey, M.B., is granted a perm. comm. in this rank (Sept. 15); J. Hutchinson, M.B., is granted a S.S. comm. as a Flg. Off. for three years on the active list with effect from and with seniority of Aug. 24; Flg. Off. F. P. Schofield, M.B., is promoted to the rank of Ft. Lt. (Sept. 15); Flg. Off. C. J. MacQuillan, M.B., B.A., is transferred to the Reserve, Class D.2 (Sept. 15).

RESERVE OF AIR FORCE OFFICERS.—D. H. B. Clark is granted a comm. in Class A.A., General Duties Branch, as a Plt. Off. on probation (Aug. 30); Flt. Lt. D. Le Bas is transferred from Class D.2 to Class D.1 (Aug. 20).

Appointments.

Week ending Sept. 20.

GENERAL DUTIES BRANCH.—Wing Commanders H. R. Busted, O.B.E., A.F.C., to R.A.F. Depot, Uxbridge, for Staff Course at R.N. College, Greenwich, 7/9. B. L. Huskisson, D.S.C., to R.A.F. Depot, Uxbridge, whilst attending course at Senior Officers' School, Sheerness, 21/9. R. J. F. Barton, O.B.E., to No. 1 School of T.T. (Apprentices), Halton, to command No. 4 Apprentices' Wing, 19/8.

Squadron Leader W. Thomas, M.C., to No. 1 School of T.T. (Apprentices), Halton, 19/8.

Flight Lieutenants J. C. M. Hay, T. C. Thomson, R. A. George, M.C., and N. Comper, to H.Q., Cranwell, 6/8. L. O. Brown, D.S.C., A.F.C., H. S. P. Walmsley, M.C., D.F.C., G. T. H. Pack, and J. B. Allen, to No. 1 School of T.T. (Apprentices), Halton, 19/8. P. G. Scott and J. M. Glaisher, D.F.C., to School of T.T. (Men), Manston, 20/9. J. D. Breakey, D.F.C., to Fighting Area H.Q., Uxbridge, 20/9. J. Duncan, to R.A.F. Cadet College, Cranwell, 20/9.

Flying Officers E. S. Steddy, to Home Aircraft Depot, Henlow, on transfer to Home Estab., 30/8. A. E. Evans, D.F.C., to R.A.F. Base, Gosport, 19/9. C. W. McK. Thompson, to Station H.Q., Duxford, 1/9. J. W. Hustwaite, M.B.E., I. E. Goodman and F. H. Cashmore, to H.Q., Cranwell, 6/8. J. W. Jean, D.S.M., C. Walker, C. H. V. Hayman, F. H. Davis, A. A. Jones, S. Herbert and C. E. Galpin, to No. 1 School of T.T. (Apprentices), Halton, 19/8.

STORES BRANCH.—Flying Officers F. A. Skoulding, to H.Q., Cranwell, 6/8. V. B. Ranford, to Air Ministry, 13/9.

ACCOUNTANT BRANCH.—Flight Lieutenant J. H. B. Carson, to H.Q., Mediterranean, Malta, 25/8. Flying Officer W. E. V. Richards, to R.A.F. Base, Malta, 25/8.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident near Lahore, India, to a Bristol Fighter of No. 31 Squadron, on Sept. 14, Plt. Off. Dick Culverwell Sherman, the pilot and sole occupant of the aircraft, was killed.

An Air Ministry Appointment.

The Times of Sept. 16 states:—

Commander A. W. Brooks, D.S.O., who is being lent from to-day to the Air Ministry, is a gunnery specialist, and was gunnery lieutenant during the war of the cruisers *Nottingham* and *Birmingham*. In May of last year he was appointed an Assistant to the Director of Naval Ordnance.

The Fleet Air Arm.

The Times of Sept. 21 states:—

Following the selection of Capt. T. F. P. Calvert, D.S.O., for two and a-half years Head of the Air Section of the Naval Staff at the Admiralty to be in command of the cruiser *Frobisher* Cdr. R. B. Davies, V.C., D.S.O., A.F.C., has been appointed for duty in the section. Cdr. Davies recently completed two years' general service as commander of the battleship *Royal Sovereign* in the Atlantic Fleet, but for some four years prior to 1924 he was in charge of the Air Section. He won the D.S.O. in 1915 for repeated air attacks on the German submarine and air bases in Belgium; and the V.C. was awarded him in 1916 for gallantry in an air attack on Ferrikk Junction, Thrace, when he alighted in enemy territory to rescue Plt. Lt. G. F. Smylie from capture, after the latter's machine had been brought down.

The R.A.F. Coastal Cruise.

The R.A.F. Flight of Supermarine Southampton Flying Boats (two Napier Lion Engines), under Sq. Ldr. A. Durston,

D.F.C., which started at Cromer, on Sept. 6, arrived at Worthing on Sept. 15, and anchored off the pier-head for about an hour.

Owing to the rough weather the demonstration at Brighton arranged for the same day was cancelled, and the Flight returned to its base at Calshot.

A Service Cruise to Aden.

The Air Ministry announces that a flight of Vickers Victoria aircraft, under the command of Air Commodore C. R. Samson, C.M.G., D.S.O., A.F.C., Chief Staff Officer, Middle East Command, R.A.F., started on Sept. 16 from the R.A.F. station at Heliopolis, Cairo, on a long-distance cruise to Aden.

The flight is one of a series of extended cruises that are being carried out by the Royal Air Force to test air route arrangements and to gain Service experience with post-War types of aircraft over routes not regularly flown over.

The itinerary for the outward flight is Aswan, Atbara, Port Sudan, Massowa, and then across the Red Sea to Aden. The return journey will be made by way of Khartoum and Wadi Halfa. The total distance to be covered is approximately 4,500 miles.

The Vickers Victoria aircraft is a 25-seater troop carrier fitted with two Napier Lion engines.

R.A.F. SPORTS.

Rugger in the R.A.F.

The importance of Rugby Football in the Services is beyond all possible doubt. The theory that it cannot be played in Iraq has been utterly confounded by facts. In the issue of THE AEROPLANE dated Feb. 24, 1926, a correspondent wrote:—"Rugger has been flourishing this season. About 10 R.A.F. Units have been running teams." Having driven the Soccer enthusiast out of his last ditch the question to be faced is that of improving Rugger in the R.A.F.

Apparently in every R.A.F. Station there is an "AC. Blank" who plays a marvellous game but is never seen by the Selection Committee. It is to be presumed that he plays for his Unit in the Cup matches but he does not get a trial for the representative side because the Cup finals are played after the inter-Service games.

The following suggestion is made with due humility. That a touring team consisting, if necessary, of dug-outs, but essentially of players who really understand the game, should play all the big Stations before the end of December every year. This scheme might kill a few star turns of a by-gone age, but they would spot the likely youngsters, and how can old Rugger men die better, anyway?

Another problem is the one of leave. Obviously the first-class player cannot get first-class Rugger on his own Station. If the R.A.F. representative side is to compete with the other Services the members of the side must play regularly with first-class Clubs. And if they are good enough to play for first-class clubs they ought to be able to get leave to do so.

As this consists as a rule in getting Saturday mornings off it is presumably a matter for individual commanding officers. There are always plenty of Army and Navy players turning out regularly for London Clubs, with considerable profit to their respective representative sides.

There is the obvious argument that if Rugger is to be encouraged in the Service the best players must always play for their Unit or Station. But on the other hand the beginner cannot show up to his best advantage in a team of really good players. The R.A.F. Cup has been won more than once by a team without one member of the R.A.F. representative side in it. Also the fact that a man plays for a club does not mean that he can never turn out for his Unit, nor does it mean that he will not take any interest in Station Rugger. It simply means that instead of losing his form he will probably improve it.

One cannot believe that all commanding Officers in the R.A.F. are too old and decrepit to remember or realise the importance of Rugger or that they all played Soccer, and this Saturday leave business is up to them.—C. M. MCA.

R.A.F. Boxing.

The following fixtures have been arranged by the R.A.F. Boxing Association for the coming season:—

Oct. 22.—v. Household Brigade, at Chelsea Barracks. Oct. 27-28.—The Sir Charles Wakefield (Novices) Team Tournament, at Henlow. Nov. 5.—v. Belsize B.C., at Uxbridge. Nov. 18.—v. Cambridge University, at Cambridge.

Jan. 6.—v. Civil Service, in London.

Feb. 10.—v. Oxford University, at Halton.

Mar. 2 and 3.—R.A.F. Individual Championships, at Halton.

The R.A.F. Team will also enter for the inter-Services Tournament for Lord Desborough's Trophy at the Stadium Club on Dec. 9. This tournament is for amateur teams representing the Navy, Army, Air Force and Territorial Force.

THE TYPE TEST OF THE CIRRUS MK. II.

The Cirrus Mk. II engine, produced by A.D.C. Aircraft Ltd., as a development of the well-known Cirrus Mk. I, completed the Air Ministry type-test of 100 hours duration in the small hours of Sunday, Sept. 19.

The components have all passed inspection as in remarkably good condition, but at the moment of going to press the firm have not received official notification from the Air Ministry to that effect.

The Mark II Cirrus, with dual ignition and impulse starter, weighs 256 lbs., which is about 30 lbs. less than the Mark I, and has been type-tested at a rated output of 75 b.h.p. and a maximum of 86 b.h.p.—which is nearly 20 h.p. more than the original.

Those who have seen the Cirrus Mk II engines in the two de Havilland Moths to which they have been fitted for development tests, will have realised already that the new engine is a great step forward.—w. H. S.

SWINGING AIRSCREWS.

Air Ministry Notice to Airmen No. 58 of 1926 states that in order to avoid risk of accident when personnel of the Royal Air Force or of Government civil aerodromes are employed for starting up aeroplanes it is necessary that pilots should follow a uniform procedure for swinging airscrews; the procedure in use in the Royal Air Force has accordingly been extended to Government civil personnel.

This procedure, which should be strictly observed by civil pilots when R.A.F. or Government civil personnel are engaged, is outlined in the notice.

The pilot should exercise the greatest care never to allow the airscrew to be touched before he has ascertained that the switches are in the "switch-off" position, and should realise that if an accident in starting up occurs through his failure to observe the correct procedure he alone will be held responsible.

PARACHUTE DESCENTS.

Air Ministry Notice to Airmen No. 56 of 1926 states:—It is hereby notified that under Article 13 of the Air Navigation (Consolidation) Order, 1923, as amended by the Air Navigation (Amendment) Order, 1925, parachute descents from civil aircraft are prohibited unless permitted by Directions issued by the Secretary of State.

Formal application for the necessary permission, giving full details of the proposed descent, should be addressed to the Secretary (A & I), Air Ministry, Gwydyr House, Whitehall, London, S.W.1, at least 14

days prior to the date on which it is desired to make the parachute descent.

[Pilots whose machines catch fire in the air may find a trifle of difficulty in giving the statutory 14 days' notice.

Which reminds one of the Jew-man, who, when a tribal colleague consoled with him in having a fire at his place of business, said, "Hush! Ikey! Dat vosn't till next week."

It strikes one that the Air Ministry would do better to prohibit exhibition parachute drops entirely and to permit the use of parachutes only for practice drops by Service personnel, Certificated Civilian pilots, and experimenters for parachute makers.—C. G. G.]

THE NEW YORK—PARIS FAILURE.

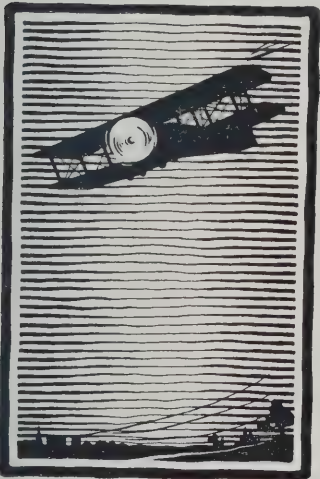
A Reuter message from New York dated Sept. 16 states:—Just as all seemed ready this morning for Captain Fonck's flight from New York to Paris it was found necessary to postpone the flight through the discovery that one of the petrol tanks was leaking. The leakage aggregated ten gallons an hour.

It is feared that the flight may now be indefinitely postponed, as the weather forecast indicates that to-day may be the last day on which the flight could be undertaken for a fortnight, and after that it is considered that it will be too late in the season for a Transatlantic flight.

As THE AEROPLANE was going to press news was received by telephone (very kindly) from *The Evening Standard* and *Evening News* to say that in trying to get off with a full load the machine had crashed and burned. M. Fonck and Lieut. Curtin, U.S.N., had jumped clear, but a French wireless operator and a Russian mechanic were burned to death. Apparently the machine failed to rise from a three-quarter-mile prepared run-way, fell over the end of it into a gully, and behaved as it naturally would. Which is much what many people expected of it.

ALL THE WORLD'S AIRCRAFT, 1926

The 1926-27 edition of All the World's Aircraft will be published within the next week and orders can now be booked through the Publishing Department of Aeronautics Ltd., or direct from the publishers, Sampson, Low, Marston and Co. Ltd. The new edition contains descriptions of over 600 different types of aeroplanes with 476 photographs and 109 line drawings, which give the general arrangement of the very latest types and of some types of which no photographs are obtainable. Very much more complete information has been obtained for the Historical Section, including a full description of the organisation of the French Military and Naval Aviation Services.



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DOESN'T IT STAND TO REASON that a Firm which controls under highly technical methods the complete range of processes from the raw bloom to the final manipulated product, is in a much better position than most to supply you with Steel Tube (plain or manipulated) for all Aeronautical purposes.

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COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 22; Tuesday, 16; Wednesday, 18; Thursday, 19; Friday, 16; Saturday, 19; Sunday, 4.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich, London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 55, passengers 543, freight 17 tons.

AIR UNION:

Paris—London: Machines 31, passengers 112, freight 11 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 16, passengers 40, freight $3\frac{1}{2}$ tons.

SABENA:

Machines 5, passengers 35.

DEUTSCHE LUFTHANSA AG:

Berlin—London: Machines 6, passengers 0.

PRIVATE:

Machines 4, passengers 7.

Total number of trips by British Machines, 59, carrying 350 passengers. Foreign Machines, 55, carrying 187 passengers.

Comparative Figures:

Week ending Sept. 19:

Machines, 14; Passengers, 537; Crews, 145; Total personnel, 682.

Corresponding week, 1925:

Machines, 122; Passengers, 572; Crews, 163; Total personnel, 735.

Corresponding week, 1924:

Machines, 146; Passengers, 601; Crews, 177; Total personnel, 778.

Corresponding week, 1923:

Machines, 109; Passengers, 379; Crews, 172; Total personnel, 551.

Corresponding week, 1922:

Machines, 98; Passengers, 337; Crews, 184; Total personnel, 501.

Corresponding week, 1921:

Machines, 66; Passengers, 154; Crews, 84; Total personnel, 238.

Corresponding week, 1920:

Machines, 100; Passengers, 261; Crews, 123; Total personnel, 384.

Croydon Notes.

Owing to the Lympe meeting, nothing has been allowed to occur at Croydon. Anything which happened last week will take place in THE AEROPLANE next week.—G. D.

FATAL PARACHUTE JUMP.

Mrs. A. T. Cain was killed at Leicester on Sept. 9 in attempting a parachute descent from an aeroplane belonging to the Surrey Flying Services. The Times account of the accident states:—

A woman made a successful descent on Sunday, and yesterday Mrs. Cain was taken up in the machine to make a parachute descent. The same precautions were taken last evening before the aeroplane left the ground. Mrs. Cain was strapped to the parachute, and as the machine ascended she waved to the crowd. Onlookers state that on receiving the signal from the pilot, Mrs. Cain jumped from the wing of the aeroplane. She was then seen to turn several somersaults, and fall straight to the ground from a height of 1,000 ft., while the parachute remained attached to the aeroplane. The cause of the accident is at present unexplained.

The inquest has been adjourned and the affair cannot be properly discussed until the evidence and verdict have been published.

MR. COBHAM'S RETURN JOURNEY.

Mr. Alan Cobham, who, with Sgt. Ward, R.A.F., and Mr. Capel, is attempting to fly from Melbourne to London, arrived at Rangoon from Victoria Point, on Sept. 15. He said that

he had been weather-bound in a sheltered harbour for days and was unable to communicate with the outer world.

Mr. Cobham was delayed at Rangoon for 24 hours owing to the heavy monsoon rain and a storm in the Bay of Bengal, but he flew to Akyab on Sept. 18, and managed to dodge the storms. He intended to proceed to Calcutta on the same day but was again delayed by the weather.

On Sept. 13 he arrived at Calcutta by way of Chittagong.

In an interview at Calcutta Mr. Cobham said that he did not consider that there were enough meteorological stations between Calcutta and Singapore.—One might add also that there are not enough Mr. Cobhams along that route to make such stations worth while.

A DINNER FOR MR. COBHAM.

Subject to the arrival of Mr. Alan Cobham in England in time, the Institution of Aeronautical Engineers propose to give a dinner in his honour on Thursday, Sept. 30, at 8.0 p.m., at Kettner's Restaurant, Shaftesbury Avenue, W.1.

The President of the Institution, Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., will preside. Non-members of the Institution who would like to attend the dinner can obtain tickets at a cost of 15s., exclusive of wines, from the Acting Honorary Secretary, Mr. Norman J. Hulbert, 34, Broadway, Westminster, S.W.1.

PERSONAL NOTICES.

DEATHS.

LEAVEY.—On Sept. 2, at Great Bookham, as the result of a flying accident, Capt. R. H. Leavey (late R.A.F.), of the Southern Counties Aviation Company.

SHERMAN.—On Sept. 14, near Lahore, India, as the result of a flying accident, Dick Culverwell Sherman, Plt. Off., No. 31 (Army Co-operation) Sqdn., R.A.F.

Mr. Sherman joined the R.A.F. with a S.S. comm. in January, 1925, and was posted to No. 4 F.T.S., Abu Sueir, for a course of flying instruction. In March, 1926, he was appointed to the Aircraft Depot, Karachi, and last July to No. 31 Sqdn.

MARRIAGES.

HILTON—MARTIN.—On Sept. 15, at St. Paul's, Knightsbridge, S.W., Plt. Lt. Edward Goodwin Hilton, D.F.C., A.F.C., R.A.F., youngest son of the late Mr. and Mrs. J. E. Hilton, of Lambourne, Berks, to Joyce Elizabeth, younger daughter of Mr. and Mrs. H. J. Martin, of Mason's Bridge, Hadleigh, Suffolk.

MUSSON—BRICE.—On Sept. 15, at St. Matthew's Church, Borstal, Francis William Musson, A.F.C., eldest son of Mrs. Musson and the late Dr. Musson, of Clitheroe, Lancs, to Margaret Edith Whitcomb, elder daughter of Mr. and Mrs. S. J. Brice, Goddings, Rochester.

PORTAL—ANDERSON.—On Sept. 16, at Hungerford, Lieut.-Cdr. Reginald Portal, D.S.C., R.N. (Flg. Off., R.A.F.), son of Mr. and Mrs. E. R. Portal, of Eddington House, Hungerford, and Miss Helen Anderson, eldest daughter of Mr. and Mrs. Frederick Anderson, of Standen Manor, Hungerford, and 54, Queen's Gate, S.W.

BIRTHS.

M'LAREN.—At Heliopolis, Cairo, on Sept. 13, the wife of Sq. Ldr. D. M'Laren (R.A.F. M.S.)—a daughter.

MAYCOCK.—On Sept. 16, at "The Wings," Felixstowe, to Dorothy, wife of Wing Cdr. R. B. Maycock, R.A.F.—a daughter.

FORTHCOMING MARRIAGE.

CAREY—WAKELEY.—A marriage has been arranged, and will shortly take place, between Plt. Lt. Denis H. Carey, R.A.F., only son of Capt. Walter Carey, C.B.E., R.N., and Mrs. Carey, of Melrose, Winchester, and Ferelyth, elder daughter of Mr. and Mrs. Seymour Wakeley, of Rainham, Kent.



AN IMPROMPTU POST-OFFICE.

English visitors from the Grand Hotel, St. Cecile-Plage—including a Director of "The Aeroplane"—helping to unload the parcels and mails from an Air Union Goliath which suffered a forced landing on the sands and looked for a time like being swept away by the incoming tide. Thus one sees the Franco-British Alliance renewed against a common enemy.

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THE AEROPLANE—SEPT. 29 1926.

Imperial Aviation.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

OCT 14 1926

Vol. XXXI. No. 13.

SIXPENCE WEEKLY.

UNIVERSITY OF ILLINOIS
as a Newspaper.

"'TWIXT SEAS UNSAILED AND SHORES UNHAILED."
(Kipling.)



A TOUR OF THE BACK-BLOCKS:—His Excellency the Right Honourable Lord Stonehaven, P.C., G.C.M.G., D.S.O., Governor-General of Australia, perhaps better known to readers of this paper as Major John Lawrence Baird, Under Secretary for Air in 1918, alighting with Lady Stonehaven from a D.H.50 (Puma engine) at Longreach, Queensland, during his tour of North Australia over the Qantas Route.

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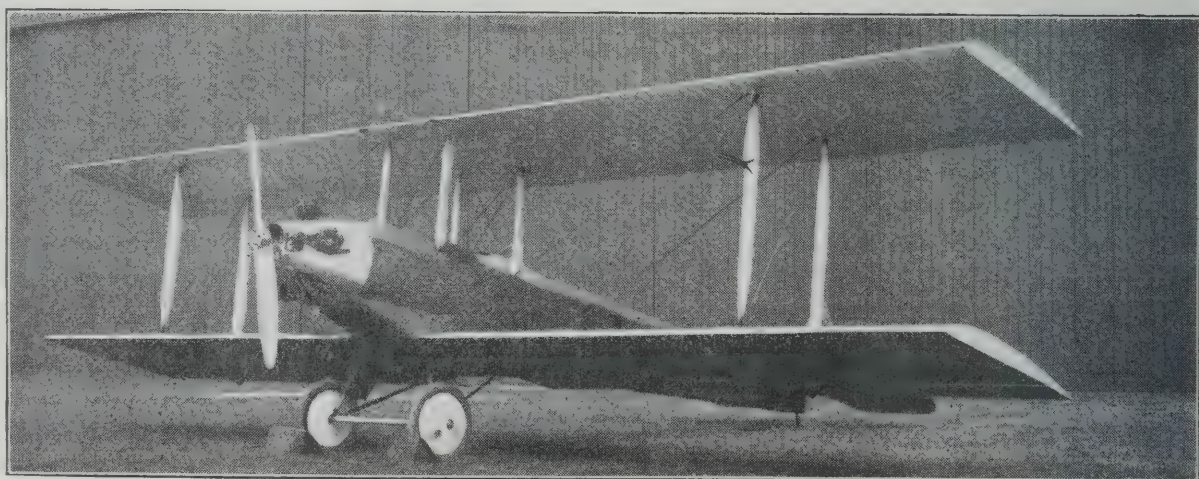
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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ON IMPERIAL AIR WAYS.

For the past three weeks the pages of THE AEROPLANE have been devoted almost entirely to the parish pump politics of light aeroplanes. And, just as one finds far more virulence in the arguments of a Parish Council as to whether the Parish Pump shall have a new handle or not than one finds in an Imperial Parliament or even in the Council of the League of Nations over a matter which affects the peace of the whole World, so there was far more ill-feeling and vituperation and vitriolic invective let loose in the Parish of Lympne over something less than £10,000 worth of pretty little light aeroplanes than ever there is over the £16,000,000 of the Air Vote in Parliament or over the good-looking solid Million Pounds which has been allocated as a subsidy to Imperial Airways Ltd.

Of course it was all frightfully amusing and all present had a very healthy seaside holiday, and on the Saturday a lot of private owners had a merry outing, and light aeroplanes got quite a good deal of advertisement out of *The Daily Mail*, and THE AEROPLANE newspaper got a lot of extra advertising out of the British Aircraft Industry, for which one is duly grateful. But, although the seeds of a great new branch of the Aircraft Industry may have been sown in the interest created in aircraft for the private owner, the immediate results have not been anything about which to write home, and many matters of much greater immediate importance have had to be side-tracked during those three weeks while we have been discussing the handle of the Parish Pump.

Therefore one would ask one's readers to turn their minds to higher things and to think Imperially for a time, for while we have been interesting ourselves so keenly in the ways of the air between Brighton and Lympne, and Eastbourne and Lympne, and Margate and Lympne, much interesting information has been made public concerning the developments of real Imperial Aviation. Therefore let us proceed to think in an imperial air way.

IMPERIAL AIRWAYS LTD.

The subject which must be first discussed is the second balance sheet and Annual General Meeting of Imperial Airways Ltd. Seeing that the British Taxpayer is interested in the firm to the extent of a Million Pounds, and that quite a number of shareholders and financiers are interested to the extent of £349,171 10s. in issued capital, one imagines that the affairs of the firm interest us people in this country quite considerably, on the principle that charity begins at home.

Not that one imagines for a moment that anybody directly concerned with aviation has any financial interest in the aforesaid £349,000 odd. For to the best of one's knowledge nobody directly concerned with aviation, except, of course, the twenty manufacturers who compose the British Aircraft Industry, has got any money with which to be interested in anything. And the said twenty manufacturers need all their money to keep their businesses together in between the erratic issues of contracts by the Air Ministry.

Nevertheless Imperial Airways Ltd. is of very distinct interest because whether it becomes eventually a kind of aerial gold-mine to the shareholders, as railways were before they came directly under Government control (which is what one hopes it will be), or whether it eventually loses all its capital and falls on evil days as did Air Transport and Travel Ltd. (which one hopes it will not) it is undoubtedly at the present day doing exceedingly valuable work in acquiring knowledge about the organisation and operation of air transport.

Moreover, and this is a matter which directly affects our air defences, the technical people of Imperial Airways Ltd. are accumulating vast stores of knowledge as to what engines and aeroplanes and pilots will stand in the way of constant wear and tear, and what they can do under all sorts of conditions of wind and weather. Also they are discovering what is needed in design and material to give improved reliability and durability. Which must in the end affect the design and construction of war machines very materially. This knowledge alone, which is in due course handed over to the technical people at the Air Ministry, and to the firms which make the aircraft and engines, will probably be well worth the million pounds spent in the subsidy.

STARTING A BUSINESS.

In considering the balance sheet of Imperial Airways we must remember that there are two ways of starting a new business. One is to start from the beginning with no capital and no equipment and to build up from that, much as in the legendary days of the aerodrome at Brooklands it was said that a certain aviator arrived there with a spanner in his pocket and left it with a complete aeroplane and a spare engine and a motor-car, having acquired the said assets in exchange for experience imparted to other people. The other way is to start a business with a large supply of capital and to spend that capital for a certain number of years in buying experience and material, without any intention or hope of making a profit during that period, and thus creating a valuable goodwill for the business.

Imperial Airways Ltd. have entered into the business of air transport on the latter principle. They began by buying the best material available in the way of aeroplanes and engines, and by buying all the experience available among the personnel of the four air lines which they acquired and amalgamated at the start. In the two years during which they have been operating they have acquired a great deal more experience and they have paid for it rather dearly in some ways. Also they have acquired, or are in the course of acquiring, various new aircraft, such as the Armstrong-Whitworth Argosies and the De Havilland 66s which represent the last word in technical knowledge to-day.

The result is that, although on the balance sheet their losses for the year appear to be heavy for those of us who are accustomed only to handling a few hundreds of pounds



ON THE IMPERIAL AIRWAY.—At Rutba Wells, the halfway stop between Gaza and Baghdad. In the middle may be seen the Director of Civil Aviation, recognised by glint of eyeglass, apparently doing reverence to the mysterious rites before him. The man in uniform is an inspector of Iraqi constabulary.

at a time, they are really very small when judged by the standards of high finance or even of big transport operating companies such as railways or steamship companies.

A TRADING PROFIT.

The actual trading account shows a profit of £21,749 2s. 7d. The detailed figures for this account are not available. Naturally the firm is not going to publish for the benefit of rival air lines all the World over just what it costs to run each of its machines, and how much it pays for petrol and oil, and the exact mileage covered by each of its machines, and the wages paid to its various employees, and how much each machine and engine has cost for repairs. Those figures are quite legitimately its trade secrets. But the figure quoted may be taken as accurate.

It represents presumably the difference between, on the one hand, the income which is made up of the Government Subsidy of £130,000 for the year plus passenger fares plus freight charges for goods plus the hire of special machines and so forth, and, on the other hand, the expenditure on the pay of operating officials (as distinct from directors' fees), pilots, mechanics, ground staff generally, the cost of petrol and oil and other consumable stores, spare parts, and general repair and maintenance of flying stock and premises.

On the simple basis of receipts against expenditure, if one cut out the subsidy of £130,000, this would mean a net trading loss of £108,000. But it must be remembered that the firm was formed on the distinct understanding that a subsidy of a certain sum per annum for ten years would be part of its fixed income, this £130,000 being the sum allocated for the year 1925-26, though it is to become less and less year by year in each of the remaining eight years.

THE ACTUAL LOSS.

The profit and loss account, when all other items of expenditure such as directors' fees, insurance, advertising expenses and reserve for depreciation, or, as it is called, obsolescence, of aircraft and engines, are taken into consideration, shows a net loss of £20,414 19s. 8d. And, after all, when one considers that the firm is in process of building up a good will, this is quite a small loss out of a paid-up capital of approximately £350,000.

It shows at any rate that the management of the firm is being as economical as possible and is minimising the losses by strict care and attention to expenditure, though everybody who has any knowledge of the firm's flying stock knows well that no economies are made by using cheap material or workmanship.

INTERESTING FIGURES.

A number of the figures in the balance sheet are of considerable interest. For example, the aircraft and engines in stock as at Mar. 31, 1925, were valued at £117,743 0s. 11d. (one likes that 11d.). The additions during the year to Mar. 31, 1926, amounted to £63,531. These would presumably include the new Handley Page Wios, but not the Argosies. Stores, spare parts and tools amount to £25,590 16s. 10d. Against the new additions for the year the sum of £27,166 12s. 10d. is placed as a liability for "Reserve for obsolescence." Which means writing off something over one-third the value of the new machines in the course of the year. On this assumption the life of an aeroplane is expected to be about three years.

Barring crashes, we know that a well-built aeroplane will last for ten years or more (as R.A.F. pilots who are flying machines of 1916 design know to their sorrow). But according to the Imperial Airways scheme, the value of a machine can be written off completely at the end of two or three years and it can be put off the Service merely because it is obso-

lete and not because it is in any way unfit for flying. Which is very sound.

Another figure in the balance sheet which is of particular interest is that of £1,033 3s. 0d. for survey expenses of the Cairo to Karachi route. The work done in surveying all that line of country from Cairo to Karachi and back again, which was done by Colonel Minchin and Colonel Burchall, was remarkably cheap at the price.

One always admires the exactitude of the people who make balance-sheets. Presumably the 3s. was for the taxi which conveyed the explorers and their souvenirs from Victoria to Wolseley House.

A DISAPPOINTMENT.

The Directors' Report says that "Owing to the delay in delivery of new aeroplanes the Company were unable to earn the increased revenue which the Board had anticipated and considerable traffic passed to the benefit of foreign competitors." Perhaps if the Board had merely expected the increased revenue and had not anticipated it they might have saved a little more money. But as already indicated the loss is really very small under the circumstances.

The Report further states that in the interests of further development single-engined aircraft of obsolescent design will be withdrawn from the service and replaced by aircraft known to be of more efficient design and capable of successful commercial operation. £18,000 has been appropriated to write off certain of these single-engined machines, which, although fully licensed as airworthy, do not conform to the policy of using multi-engined aeroplanes on the regular air routes. As the Directors say, this was a costly decision to take, but the Board felt that the first desideratum was to create a good will based upon safety and reliability.

Further the Board point out that the accounts under review bear both the high cost of maintaining the aircraft of uneconomical design and the cost of writing them off. And the Board feel confident that having standardised two and three-engined types the decreased cost per ton mile together with the marked increase in traffic during the current year will reduce the debit balance in the next balance-sheet.

There is interest in noting that the Imperial Airways fleet now consists of sixteen aeroplanes and that five three-engined machines (the D.H.66s) are under construction for the Cairo-Karachi line, which will begin work early in 1927.

Those who are concerned with finance will be interested to learn that part of the capital for the Cairo line has been provided out of existing resources but that additional capital will be necessary, and the uncalled balance of 10s. per share will be called up by two calls of 5s. each.

THE CHAIRMAN'S SPEECH.

In his speech at the Shareholders' Meeting on Sept. 22 Sir Eric Geddes gave a frank explanation of the policy of the Board. He said that the reduction of about £12,000 in the profits from the trading account as compared with the preceding year was due firstly to the fact that though the mileage flown was almost the same as in the preceding year other expenditure was for a period of full twelve months instead of for ten months in the preceding year, when two months were lost owing to the notorious strike of pilots and mechanics, and that secondly there had been an immense increase in advertising expenditure.

Maintenance costs for the year amounted to £62,000, and the relative cost of maintenance had now been reduced thanks to the more economical types of machines. The cost of insurance had been substantially reduced, partly because of a profitable change in the insurance arrangements and partly because owing to the firm's policy of inspection and upkeep



A HEALTH RESORT.—Another view of Rutba Wells on the Cairo—Karachi Line. Puzzle.—Find the wells.

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of equipment the actual cost of insurance had been reduced from £20,000 to £11,000.

Further he pointed out that owing to the delay in delivery of new machines and the consequent shortage of capacity during July and August of last year, when traffic was at its height, and passengers had to travel by foreign lines, the ultimate revenue figures were very little in excess of the first year's working, consequently the profit and loss account had been adversely affected both by abnormally heavy charges and by abnormally reduced revenue.

He remarked that the shareholders ought to feel proud that the company ranked highest in the World in its standard of maintenance and added that the continued confidence which the Aeronautical Inspection Directorate of the Air Ministry had in the Company's methods was very gratifying.

As to the current year's working, he said that during the first five months Imperial Airways had carried more passengers than in the whole of the year represented in the balance sheet. The growing confidence of the public in air transport was shown not only by this but by the fact that during the year Imperial Airways had been entrusted with over nine million pounds sterling of bullion and precious metal for conveyance.

On the subject of the Cairo-Karachi route he said that at first the journey would take three-and-a-half days but that this would soon be reduced to three days, and with subsequent extensions of night flying it would be still further reduced.

The first flight, he said, would take place at the end of this year, and that the Board were proud to say that the first aeroplane to make the journey would carry not only Sir Samuel Hoare, the Secretary of State for Air, and his personal staff, but also Lady Maud Hoare, who would accompany her husband on the complete flight from London to Cairo.

A DESERVED TRIBUTE.

As to the general operation of the firm, Sir Eric said:—The work of the Managing Director is done very largely by your General Manager, Major Woods Humphery, and I wish on behalf of the Board to pay a generous tribute to this gentleman's great ability and whole-hearted devotion to your interests. He is rendering immense service to the cause of Civil Aviation.

One is glad to see that Sir Eric paid this tribute to Major Woods Humphery. Nobody is more averse to personal advertisement than is the General Manager of Imperial Airways Ltd. On various occasions when his name has been mentioned in *THE AEROPLANE* he has expressed his dislike of individual publicity. But on such an occasion as this one feels that he must submit to a certain amount of personal comment.

In the course of some eighteen years' close connection with aviation one has met most of the people who count for anything in this country or abroad. And one has certainly not met anybody concerned with aviation who combines sound engineering knowledge with a sound commercial outlook to a higher degree than does George Woods Humphery.

He is primarily an engineer, having learnt his engineering at Yarrow's on torpedo boats, one of the finest possible schools for the practical engineer. During the War, although chiefly employed on technical work, he did a great deal of flying as a pilot, and since the War, until about a year ago, he continued to fly and qualified regularly each year for his certificate as a commercial aviator. Thus both as an engineer and as a pilot he can talk on equal terms with those specialists who have to work under him.

His commercial acumen is a natural gift and he possesses this quality in a degree which is very unusual among practical engineers. One of the greatest authorities on transport on the Continent described Major Woods Humphery recently as the best air traffic operator in Europe. And the epithet is undoubtedly well deserved. He always follows a progressive policy whether on the technical or on the commercial side but he goes ahead cautiously and is not carried away by enthusiasm for any particular types or methods. When ultimately Imperial Airways Ltd. becomes a commercial success it will be so very largely because of the sound judgment of George Woods Humphery.

THE END OF THE MEETING.

In concluding his speech Sir Eric referred to the happy relations existing between the Board of Directors and the staff. And he remarked on the skill and ability of the engineering staff and the pilots, to whom, he said, great credit was due for the fact that during the period covered by the balance sheet no accident had occurred involving injury of any kind to passengers. He commended the whole staff for their loyalty and enthusiasm.

One gathers that there were certain dissentient voices at the meeting. One newspaper reported that two feminine shareholders wanted the Company to be wound up, but unfortunately omitted to give their arguments. Arguments can always be found in favour of abolishing anything, and sometimes such arguments are useful because they suggest new ideas in the opposite direction.

The Times report says: "Some fears were expressed by one

or two shareholders that the new commitments in the Middle East would worsen the financial position," and adds that this should not be the case as there would be less intensive forms of competition with other forms of transport there. Personally one imagines that with really economical machines and fairly good fortune in the first few months of flying, the Cairo-Karachi route ought at least to gooden the firm's position (to adopt the useful word-formation of *The Times*) and may even betteren it.

AN OUTSIDE CRITIC.

Much as, according to the proverb, the Devil can always quote scripture for his own ends, so almost anything can be proved by statistics. Therefore it is solely because of the humour of the situation that one mentions one aspect of the subsidy question as set forth by a not too kindly critic of Imperial Airways.

According to his figuring, Imperial Airways Ltd., having absorbed a subsidy of £130,000 and having carried approximately 13,000 passengers in the course of the year reviewed in the balance sheet, it actually costs the British Taxpayer £10, per head for every passenger carried across the Channel. And assuming that it is still true now, as it has been for the last two or three years, that the majority of the passengers are Americans, this means that in addition to paying our debt as a nation to the American Government, the British taxpayer is actually paying every American citizen who crosses the Channel by air a matter of £10 for the fun of doing it. One hopes that the American passengers of Imperial Airways Ltd. will be duly appreciative of the fact.

Still, as one has already indicated, the subsidy is really being spent in order to create a good-will, not only for Imperial Airways Ltd. but for Civil Aviation in general. And whether the passengers carried are Americans or Andorrans does not matter very much so long as passengers are carried in sufficiently large numbers to convince the British Public ultimately that air travel is a safe method of transport. They all help to make the British Nation air-minded, though of course air-mindedness would be increased more rapidly if all the passengers were English.

Taking it all round, the position of Imperial Airways Ltd. is vastly better than it might have been. And the Board are to be congratulated on being able to make such a good financial showing.

SOME SUGGESTIONS.

At various times one has felt called upon in the interests of aviation to criticise our air lines, before they were amalgamated into Imperial Airways and since. And one will continue to do so whenever anything occurs which demands criticism. But at the present moment our one and only air line is doing as well as can be expected, considering that the progress of aircraft design is so slow, not only in this country but in every other.

One imagines that the commercial side of Imperial Airways is about as well run as it can be, except that it loses many opportunities for getting publicity of the right kind such as would influence people of the right class. Its publicity department is too fond of "stunt" publicity and does not give enough attention to convincing solid commercial men of the benefits of air transport. The firm's machines have been carrying practically full loads all through the busy part of the year, and passengers have even been turned away, but that does not necessarily mean that the passengers have become regular customers.

What is wanted now is greater efficiency in the machines themselves. One of the great difficulties in passenger-carrying aircraft is that the individual passenger occupies more space than he is worth. Any of the firm's machines, even the obsolete single-engined types, can carry a very much greater weight than that of the number of passengers who would completely fill their cabins.

The trouble really is that the specific gravity of a human being is not high enough. The result is that goods traffic pays very much better than passenger traffic, in aircraft as in everything else, because not only can goods be packed tighter than passengers, but they actually weigh more for the same amount of space, and pay according to weight.

IMPROVEMENTS NEEDED.

At the same time one does believe that our designers ought to be able to achieve more than they accomplish. The Avro Avian at Lympne showed that an aeroplane can carry two passengers with about the weight of another passenger stowed away as luggage, at 100 miles an hour with a 60 h.p. engine. The Bellanca people showed long enough ago in the United States that six people can be carried with 200 h.p. at 130 m.p.h. So that evidently a passenger aeroplane can be built to carry passengers at something between 100 m.p.h. and 120 m.p.h. for as near as no matter 30 h.p. per passenger.

So far the best of our passenger machines want about 55 h.p. per passenger to do about 100 m.p.h. top speed. When we get down to 30 h.p. per passenger on big aeroplanes we shall probably be somewhere near making passenger aircraft pay.

But our aim should be not more than 20 h.p. per passenger.

FAIREY AVIATION COMPANY, LIMITED



HEAD OFFICES AND WORKS: HAYES, MIDDLESEX

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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Therefore it seems that the next step towards making Imperial Airways a paying proposition is to get hold of still more highly-efficient aircraft.

It will be decidedly interesting to see how the new De Havilland 66s work out on actual service. Of course both they and the Armstrong-Whitworth Argosies, although they do on paper show something like 50 h.p. per passenger, actually use very much less horse power. The Bristol Jupiter and the Siddeley Jaguar engines give approximately 450 h.p. and 400 h.p. each respectively, but they are not run at anything like that power when the aeroplanes are actually cruising along their regular air route.

They are never asked to give full power except against a strong head wind or when hurrying to get home before dark. So that probably their actual power-output in the course of a year's working does come out at something nearer the desired 30 h.p. per passenger.

But even so there is still considerable room for improvement in running costs of commercial aircraft. For though the engines may be highly efficient at their top speed, their petrol consumption is probably nothing like so efficient when run at cruising speed, and one has never yet seen a passenger-carrying aeroplane which could not be made a good deal more economical by more strenuous cleaning up of its exterior.

AN ADVOCATE OF PROGRESS.

One was interested to note that among the shareholders who spoke at the Meeting was Mr. Harrington Edwards, who said that the firm ought to have more support from the Government and suggested also that with air transport so safe they might provide a new air station in the Metropolis which would be more central than that of Croydon.

One remembers Mr. Harrington Edwards in the very early days of aviation as an ardent enthusiast who had an excellent scheme for the organisation of air ports all over England. He was then about twenty-five years in front of his time in his imagination of what aviation will be some few years hence, and in his advocacy for an air station in the middle of London one fears that he is again twenty-five years too soon. Still it is just as well that some people do look that far ahead.

Personally one would very much like to live to see an air station in the Metropolis such as that which Sir Sefton Brancker approved some years ago which was to be produced by roofing over the Pimlico area between Victoria Station and the Thames. Such a scheme is certainly no more crazy than a scheme for the Waterloo Station of to-day would have seemed when the Stockton-Darlington Railway began running. So these things will happen in due course. And we may yet see Major Woods Humphery with a white beard, though one fears without any hair on his head (such is the strenuousness of the task) installed in palatial offices under a vast roof-aerodrome down by the River.

In the meantime one wishes well to the progress of Imperial Airways in the immediate future.

THE WAY TO INDIA.

Naturally one of the most interesting features of the work of Imperial Airways in the near future is the development of the line from Egypt to India. According to present arrangements three of the five D.H.66s will leave England on Jan. 1 and will fly by way of Berlin and Warsaw to Constantinople and Aleppo.

From Aleppo the machine carrying Sir Samuel and Lady Maud Hoare will fly direct to Baghdad and thence by Basra to Karachi. The other two machines will fly across Syria and Palestine to Cairo. Assuming that they get there in time through Central European mid-Winter weather, the first of these machines will start on the regular service on January 12.

COMPARATIVE FIGURES.

| Stages. | | Fare by Air. | Fare by P. & O. Steamer. | Fare by Nairn Transport Co., and Train and B.I. Steamer. | No. of days from Cairo by Air. | No. of days from Port Said by P. & O. Steamer. | No. of days from Port Said by Nairn Transport, and/or Train and/or B.I. Steamer as case may be. |
|-----------|---------------|--------------|--------------------------|--|--------------------------------|--|---|
| Cairo | —Gaza | £ 7 | — | — | 1 | — | 1 |
| " | —Baghdad | 41 | — | 32 0 | 2 | — | 4 |
| " | —Basra | 51 | — | 38 10 | 2 | — | 6 |
| " | —Bushire | 59 | — | 41 15 | 3 | — | 8 or 13* |
| " | —Bandar Abbas | 66 | — | 48 10 | 3 | — | 12 or 17* |
| " | —Charbar | 69 | — | 55 5 | 4 | — | 20 |
| " | —Karachi | 72 | — | 58 15 | 4 | — | 15 or 22 |
| Port Said | —Karachi | — | 50 | — | — | 10 | — |
| " | " —Bombay | — | 50 | — | 6 | 9 | — |
| | | | | | (by rail from Karachi) | | |

THE BAGHDAD ROUTE.

The Imperial Airways route to Baghdad differs from the R.A.F. route in that machines will come down at Ismailia to pick up mails and will then go on to Gaza, where a new aerodrome is being made. From Gaza they will follow the direct course to Baghdad missing the R.A.F. aerodromes at Ziza, Amman and Ramadi. Between Gaza and Baghdad there is a scheduled stopping place at Rutba Wells, which is just about halfway between Gaza and Baghdad. At Gaza and Rutba tanks holding some thousands of gallons of petrol are being installed.

The petrol for the Rutba tanks will have to be taken across the desert in motor lorries from Baghdad, an unavoidable expense which must necessarily put up the running costs considerably. The importance of Rutba Wells in the new line was rather well put by Major Woods Humphery when he remarked to one the other day that the journey from Gaza to Baghdad with the refuelling depot at Rutba was rather like motoring from London to Edinburgh with a can of petrol and some water waiting for one at York and nothing of any kind in between.

TIMES TO KARACHI.

The time-table at present is based on the idea that passengers will emplane at Heliopolis, Cairo, on Wednesday afternoons, will stay the night at Gaza, and will reach Baghdad in the early afternoon of Thursday. Until the service is fully developed passengers will stay the night at Baghdad, go on to Basra next day, Friday, and to Bandar Abbas on Saturday, and presumably Karachi on Sunday. But the time-table when the route is fully developed is planned by Imperial Airways Ltd. to be as follows:—

| EASTBOUND. | | | WESTBOUND. | | |
|------------|---------|----------------|------------|---------|----------------|
| Wed., | Cairo | ... dep. 13.00 | Thurs., | Karachi | dep. 06.00 |
| " | Gaza | ... arr. 16.00 | " | Charbar | arr. 11.10 |
| Thurs., | " | ... dep. 06.00 | " | " | dep. 12.10 |
| " | Rutba | ... arr. 10.15 | " | Bandar | " |
| " | " | ... dep. 11.15 | " | Abbas | arr. 16.15 |
| " | Baghdad | arr. 14.10 | Fri., | " | dep. 07.00 |
| " | " | dep. 14.30 | " | Bushire | arr. 12.15 |
| " | Basra | ... arr. 17.35 | " | " | dep. 13.15 |
| Fri., | " | ... dep. 06.00 | " | Basra | ... arr. 16.25 |
| " | Bushire | arr. 09.15 | Sat., | " | dep. 06.00 |
| " | " | dep. 10.15 | " | Baghdad | arr. 09.00 |
| " | Bandar | " | " | " | dep. 09.15 |
| " | Abbas | arr. 15.45 | " | Rutba | ... arr. 12.00 |
| Sat., | " | dep. 06.00 | " | " | dep. 13.00 |
| " | Charbar | arr. 10.15 | " | Gaza | ... arr. 17.00 |
| " | " | dep. 11.15 | Sun., | " | ... dep. 07.00 |
| " | Karachi | arr. 16.45 | " | Cairo | ... arr. 10.00 |

THE BASIS OF SUCCESS.

The main workshops of the line will be at Cairo. The scheme is to have one machine in reserve at each end of the route, two actually flying, and one being inspected and overhauled under the A.I.D. Besides the main stopping places already mentioned landing grounds are being arranged between twenty-five and thirty miles apart on the Cairo-Baghdad portion of the route, and between Basra and Karachi there will be eight landing grounds with emergency refuelling stores. On this route there is one stretch of 140 miles without a landing ground, owing to geographical considerations.

Lieut.-Col. F. C. Shelmerdine, O.B.E., has been appointed by the Department of Civil Aviation to take charge of the route in so far as the Air Ministry's responsibilities are concerned. He will in

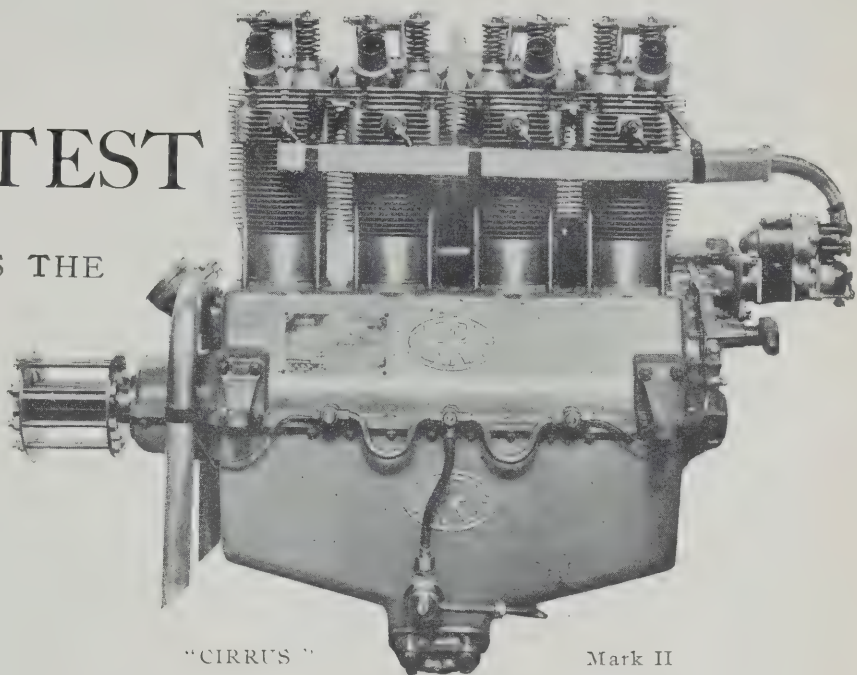
effect be the Civil Air Traffic Officer at Cairo, though presumably his duties will include flying periodically over the whole route. Those civil aviators who have had so many pleasant dealings with him and have received so much kindness and consideration at his hands ever since he has been at the Air Ministry will very much regret his departure. But their loss will be the gain of those who will have to operate the Cairo-Karachi route.

If Imperial Airways and the Department of Civil Aviation cannot command success, they will, like Hamlet and his friend Horatio, deserve it. And one wishes them well, for personally one regards the Egypt-India line very much more as a strategic railway than as a tourist route. It will be at its most useful when our little trouble with Russia begins and then its existence will be more than justified, no matter what it has cost the British taxpayer and the shareholders of Imperial Airways.—C. G. G.

*According to sailings in the Persian Gulf.

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CIRRUS (Mark I)

| | | |
|-----------------------------------|---------------------|----------|
| Normal H.P. at 1,800 r.p.m. | ... | 60. |
| Maximum H.P. at 2,000 r.p.m. | ... | 65. |
| Weight, less fuel and oil | ... | 268 lbs. |
| Petrol Consumption at Normal H.P. | | |
| | 0.66 pts./h.p./hr. | |
| Oil Consumption at Normal H.P. | | |
| | 0.013 pts./h.p./hr. | |

CIRRUS (Mark II)

| | | |
|---------------------------------------|-----|-------------------|
| Normal H.P. at 1,800 r.p.m. | ... | 75. |
| Maximum H.P. at 2,000 r.p.m. | ... | 80. |
| Weight, Complete with Boss & Magnetos | | 256 lbs. |
| Average Petrol Consumption during | | |
| type test | ... | .62 pts./h.p./hr. |
| Oil Consumption | ... | .02 pts./h.p./hr. |

The Mark II “CIRRUS” is an entirely new engine, and does not supersede the Mark I, but the experience gained on the Mark I has influenced the development of this later type.

Mark II Power Curve Readings taken during type test.

| | | |
|-------------|-----|-----------------|
| 70 b.h.p. | ... | at 1,600 r.p.m. |
| 81.5 b.h.p. | ... | at 1,900 r.p.m. |
| 84 b.h.p. | ... | at 2,000 r.p.m. |
| 88 b.h.p. | ... | at 2,200 r.p.m. |

Full particulars from the Designers and Manufacturers:—

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Cables:
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THE AUSTRALIAN IMPERIAL AIRWAY.

As this issue of THE AEROPLANE is so much concerned with Imperial ways of the air it seems a suitable occasion to give some attention to the magnificent work which the Queensland and Northern Territory Aerial Services continue to do.

One always regrets that space in THE AEROPLANE is so limited that one cannot publish regularly a full account of the operations both of the Quantas and of the Western Australian Airways. These lines must eventually form important links in our Imperial air lines of communication, just as surely as the old Stockton-Darlington Railway and the Liverpool-Birmingham Railway eventually became parts of the great North-Eastern and North-Western systems.

One cannot do better than publish in its original form the summary of Quantas operations for July which reached THE AEROPLANE recently, together with the highly informative photographs which appear herewith. The month of July was particularly notable as it included the tour of Lord Stonehaven, the new Governor-General of Australia, and Lady Stonehaven, over those back-blocks of Australia which no Governor-General has hitherto been able to visit. On Sept. 21 their Excellencies completed a tour of 8,000 miles, of which 3,500 miles were covered by air.

Thanks to the ground organisation of the Quantas, and the use of the De Havilland 50 recently supplied to the Commonwealth Government, Lord Stonehaven, who will be better remembered by the readers of this paper as Major John Baird, Under-Secretary for Air in 1918, is now the most knowledgeable of all Australian Governors.

The description of the exploration journey into Northern Territory by Mr. Stark, the American mining engineer, is not only of interest as a story of adventure but because of the immense commercial possibilities which it opens for explorers of all kinds. A special note should be made of the fact that this pioneer of air exploration is an American, just as Mr. Sharpe, the pioneer of real air touring, who travelled all over European countries with Mr. Cobham, is also an American.

THE SUMMARY OF OPERATIONS.

The main feature of the month has again been the carrying out of several notable taxi trips. In all five trips totalling 3,442 miles were carried out, thus bringing the total mileage flown on special trips during the last three months up to 8,756 miles. Forward taxi booking total 5,160 miles. These figures show that our aerial taxi organisation has become an established business in Western Queensland.

Figures for the month were as follows:—Route passengers, single stages, 102; Taxi passengers, 15; Freight (lbs.), 368½; Miles flown for month, 11,635; Total Company mileage all without injuries to personnel or passengers, 378,582.

THEIR EXCELLENCIES LORD AND LADY STONEHAVEN USE OUR FACILITIES.

Since Lord Stonehaven has taken over the duties of Governor-General of Australia he has already done an enormous amount of good work by encouraging civil aviation and assisting to bring home to the public the fact that air travel has arrived and is not still a dim conjecture of the future.

Lord Stonehaven's practical statement is that he intends to use air travel in Australia on every possible occasion simply as the best means of covering Australia's great distances. What will be the result of this policy? It will mean that our Governor-General will know Australia as no other Governor-General has had any possible chance of becoming intimate with the country.

The trip from Winton to Longreach was carried out on July 28 in ideal sunny Western Queensland weather. The party consisted of Lord and Lady Stonehaven, Lieut Ronald Leggatt, R.N., A.D.C., and Mr. and Mrs. Fergus McMaster, who acted as their Excellencies' hosts at Winton.

The journey of 107 miles was accomplished in 1 hr. 20 mins. The air was slightly rough below 4,500 ft., but at 5,000 ft. a delightfully smooth passage was experienced and an excellent bird's-eye view obtained of the country for many miles on each side of the route.

Points of interest on the trip were the progress of the Longreach-Winton railway, the formation of the track and the workers' camps being clearly distinguishable.

At Evesham station the usual feeding which is occasioned by drought conditions was in progress, Mr. Watts having laid the fodder in the form of a large cross surrounded by a circle, this meant that when the sheep were let in to feed an interesting and clearly distinguishable spectacle was formed.

On alighting at Longreach their Excellencies expressed themselves as being delighted with the trip.

EXPLORATION BY AEROPLANE—WAVE HILL COUNTRY VISITED.

Readers of our Summaries will remember that last month mention was made of a long trip carried out into the Northern Territory by Mr. L. J. Stark, a prominent American mining engineer, piloted by Mr. L. J. Brain. Another similar trip of even greater importance has now been carried out which entailed an aerial journey of 1,600 miles. The furthest Westerly point reached was but 150 miles from the Western Australian border and a glance at the map of Australia will show the great area which was covered on the trip.

The party left Cloncurry on July 7, and after landing at Camooweal and Brunette Downs to replenish fuel supplies, reached Banka Banka station on the Overland Telegraph Line 565 miles from Cloncurry.

Mr. Brain states that the country between Brunette Downs and Banka Banka with its abundant grass and water was a most cheerful sight after flying over drought stricken Western Queensland.

Brisbane daily papers conveyed from Cloncurry were easily the freshest newspapers seen in that part of the country and were eagerly scanned at Banka Banka.

On the following day the machine reached Newcastle Waters after having flown low over Powells Creek and dropped newspapers. Supplies of water were put on the machine and all preparations made for the main flight into the West.

On leaving Newcastle Waters a due Westerly course was steered for 150 miles onto the Camfield River. The route followed took the party on a line varying from 50 to 70 miles South of the Munanji track which is sometimes used as a stock route for cattle travelling from the Victoria River district to Newcastle Waters and on into Queensland. The travellers therefore covered an area which is practically unknown and which it is perfectly safe to say has never been properly explored for the existence of useful pastoral areas, water courses and water, and metalliferous areas.

After leaving Newcastle Waters the course followed enabled the party to fringe along the Southern extremity of Sturt's Plain, a large area of well grassed level perfectly treeless plain which stretches Westward from the Overland Telegraph Line. On leaving the open country behind a long flight was undertaken over arid, uninteresting timber desert till the more fertile plains along the Camfield River were reached which forms part of the Victoria River basin; the flight from Cloncurry having thus passed over the headwaters of rivers flowing into the Gulf of Carpentaria, Lake Eyre in South Australia, and into the Indian Ocean.

On arrival in the Camfield River district it was discovered that the main portion of the rations were missing and the party had to supplement their small supply of rations by shooting hawks and cockatoos. Wave Hill cattle were several times seen in the distance and



IMPERIAL AIR TRANSPORT.—Mr. Stark (U.S.A.) and Mr. Brain (Quantas pilot) with their trophies, after their voyage of exploration over the unknown country on the Northern Territory,—and the D.H.9.



THE REAL OWNER-PILOT AEROPLANE.

"The fact remains that since 1924 the only two-seater aircraft which has made any headway and which is at present the approved aircraft for training novices in the State-aided Flying Clubs is the D.H. MOTH."

"The Times," 18th September, 1926.

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EX WORKS

READY TO FLY AWAY.

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it is concluded that one of these would have been in considerable danger should the opportunity have offered.

A stay of five days was made on the Camfield River, during which time one short reconnaissance flight was made and several long tramps undertaken into the edge of the timbered country. A sharp look out was kept for blacks which are not to be trusted in this district, none were encountered however, though several times their smoke signals were seen but a few miles away.

On the return journey a South-Easterly course was taken for 50 miles when Newcastle Waters was steered for. This took the machine over more new country which was observed to be of an arid nature with a good deal of low scrub in places and well timbered with the usual stunted Central Australian trees. During these flights Mr. Stark made sketches and took observations which he states will be of great value to him in planning future trips into the district.

The Newcastle Waters—Cloncurry stage was completed on the next day without incident and a very successful tour without a single flying thrill concluded with photographs of the machine and party with trophies, namely native spears and boomerangs.

MR. COBHAM'S RETURN.

Failing further misadventures, Mr. Alan Cobham should be back in England by the time this paper is in the hands of its readers.

Everybody will sympathise with Mr. Cobham most heartily on the comparative failure of his great projects. The death of Mr. Elliott has, of course, been a great blow to Mr. Cobham. And the various untoward incidents, none of them happily concerned with his aeroplane or engine as such, which have caused delays on his journey, have spoiled any chance of record-making flights either on the outward or on the homeward trips.

His outward journey was considerably slower than that made by the brothers Ross and Keith Smith at least six years ago. And even if he should reach home to-morrow, Thursday, his return journey, with all the advantages of a route which, in these days, is almost an organised air line, will only be one day faster than that of the Smith brothers on their outward journey.

The total distance which he has covered is very much less than that covered by the Marchese di Pinedo in his Pacific tour last year and it has not been a voyage of exploration as was that of the Marchese, who covered new routes over which hitherto no aircraft had flown. Nor does his speed homeward from India compare with the Marchese's flight from Calcutta to Rome.

Happily, we in England have the habit of paying as hand-some a tribute to the defeated as to the victor, and so Mr. Cobham will be feted and hero-worshipped just as much as if he had accomplished something that had never been done before. He will be lunched by the Air Ministry and by Sir Charles Cheers Wakefield and by the Overseas League, and he will be dined by the Institution of Aeronautical Engineers, and probably by the Royal Aero Club. And, generally, we shall all do our best to help him forget his ill-fortune.

At any rate we may be sure that his arduous journey will not be without its value. Mr. Cobham has a gift for absorbing and imparting information. And it is certain that in the

course of his journey he has learned much which he will duly impress upon those who are concerned with Civil Aviation. He has already indicated by cable the need for adequate wireless communications at that deserted spot in the Malay States where he was forced down by monsoon weather and seemingly lost for two or three days. If only there had been a Government wireless station there the World would not have been held in a state of anxiety for those three lamentable days.

Indubitably, part of the ultimate development of Imperial Airways Ltd. will be the expansion of the Cairo—Karachi line to Australia along the trial blazed by the Smith brothers and followed by Messrs. Parer and McIntosh and Mr. Cobham. And Mr. Cobham's expert opinion about the practicability of the route will be of high value to our only air line.

Mr. Cobham, with Sjt. Ward, R.A.F., and Mr. Capel, arrived at Allahabad on Sept. 21.

On Sept. 22 he arrived at Delhi and left for Bhawalpur on the same day.

On Sept. 23 he reached Karachi at 1.47 p.m. (local time).

On Sept. 26 he arrived at Basrah by way of Charbar (Baluchistan), and Jask (Persian Gulf).

On Sept. 27 he arrived at Baghdad and left on the same day for Alexandretta, where he arrived later in the day, a very fine day's flying.

THE MURDERER OF MR. ELLIOTT.

The Basrah correspondent of *The Times* in a message dated Sept. 22, states:—

Najim al Fahad al Sadun was to-day brought before the Nasiriyah magistrates on a charge of having murdered Mr. Elliot, Mr. Cobham's mechanic.

Police-Inspector Inayat Ullah Shah said that there was direct evidence, circumstantial evidence, and an indirect confession to convict the man. Before a reward for information was offered by the Government, a man named Thamar volunteered a statement that he saw Najim firing at an aeroplane, and that Najim had said that aeroplanes were frightening the deer, and so he had shot this one.

Najim left his native village at Abu Rubab, and was not captured for 15 days. He then told a story of having seen the aeroplane from a place 12 miles away, where he was collecting money, and said that the Arabs in that locality, among whom it was found that he had an enemy, had fired the shot. Later, he said that he thought that the shot fired had hit the aeroplane, and imagined the pilot had taken his photograph. He hoped that the aeroplane would come down, so that he might earn a gratuity.

The place at which, according to Thamar, the firing occurred is within four miles of the spot marked on the map by Mr. Cobham after his return from the flight of investigation to Nasiriyah from Basra in an R.A.F. machine. The gun used, said Thamar, was Turkish. A bullet similar to that extracted from Mr. Elliot was fired from a gun of the same type, and the lead, when melted, was found to be practically of the same weight.

ACROSS CANADA.

On Sept. 11 a Douglas seaplane (400 h.p. Liberty engine) belonging to an American citizen, left Montreal to fly across Canada. The machine carried its owner and Sq. Ldr. E. Godfrey, R.C.A.F., who was officially lent by the Canadian



"THE NORTHERN STRIP BENEATH THE SOUTHERN SKIES" (Kipling).—Newcastle Waters (Northern Territory), the centre of a great cattle and sheep country, visited by Lord and Lady Stonehaven during their 3,500-mile air tour in a D.H.50 (Puma engine). The photograph gives some idea of that part of Australia as an aerodrome.

PROVED RELIABILITY
ROLLS-ROYCE
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- | | |
|-----------------|--|
| SEVEN YEARS AGO | Rolls-Royce Aero Engines in a Handley-Page Aeroplane flew from ENGLAND to INDIA (Karachi), (5,556 miles). |
| SIX YEARS AGO | Rolls-Royce Aero Engines in a Vickers-Vimy Aeroplane flew the NORTH ATLANTIC (1,890 miles non-stop). |
| SIX YEARS AGO | Rolls-Royce Aero Engines in a Vickers-Vimy Aeroplane flew from ENGLAND to AUSTRALIA (11,500 miles). |
| SIX YEARS AGO | Rolls-Royce Aero Engines in a Vickers-Vimy Aeroplane flew from ENGLAND to SOUTH AFRICA (6,281 miles). |
| FOUR YEARS AGO | Rolls-Royce Aero Engines in a Fairey Seaplane flew across the SOUTH ATLANTIC (3,800 miles). |
| TWO YEARS AGO | Rolls-Royce Aero Engines in a Fairey Seaplane flew ROUND AUSTRALIA (9,800 miles). |
| TWO YEARS AGO | A Rolls-Royce Aero Engine in a Fokker Aeroplane flew from HOLLAND to the EAST INDIES (10,000 miles). |
| ONE YEAR AGO | A Rolls-Royce Aero Engine in a Handley-Page Aeroplane flew from BRUSSELS to the BELGIAN CONGO (5,084 miles). |

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C.P.

Air Board in order that he might test the possibility of a trans-Canada seaplane route.

The machine flew via Ontario, Sudbury, Lac du Bonnet, Prince Albert, Wabamun Lake (near Edmonton) and the Yellowhead Pass, to Vancouver, where it arrived on Sept. 19.

The Yellowhead Pass, which runs for 700 miles through the Rocky Mountains, was covered in 7 hours 20 mins.

Presumably, thanks to the policy of economy, rather than the economic policy, pursued by the Canadian Government, there are no aircraft of British origin in Canada capable of such a journey. One can only hope that Canada's new Liberal Government will prove more liberal.

BLACKBURN ACTIVITIES OVERSEAS.

Among all the firms in the British Aircraft Industry none has shown of late greater activity in the search for business overseas than have the Blackburn Company. The firm's foreign business first became prominent in the sale of several torpedo-dropping machines to the Japanese Navy. These have naturally given complete satisfaction and should influence further orders.

A more recent success on the part of the firm has been the arrangement with the Greek Government by which the firm undertook to organise the Greek Naval Aircraft Factory at Phaleron and to produce there such sea-going aircraft as might be required. Not long ago the Velos, with Napier Lion engine, which was the first seaplane to be constructed at the Greek Naval Factory, was described and illustrated in THE AEROPLANE. One gathers that thanks to Blackburn organisation the factory is now thoroughly well equipped and organised and is capable of turning out all the machines which can be required by the Greek Navy.

Encouraged by these successes the firm is now embarking on fresh enterprises. A month or two ago Sq. Ldr. Esk Sandford, who has just retired from the Royal Air Force, started for Australia to represent Blackburn interests there.

Sq. Ldr. Sandford was one of the first of the many and good Australians to join the Royal Naval Air Service. He did much valuable work during the War both as a war pilot and as a test and experimental pilot at the Isle of Grain. He is a son of that Mr. Sandford who founded the famous Sandford Iron Works, which were about the first and certainly the best affair of their kind in Australia.

He was educated in Australia and trained as an engineer besides having had practical experience in the family iron-works. On joining the Naval Air Service he devoted his attention particularly to the engineering side and became recognised as one of the best engineers in the Service. After the War he was sent to Egypt and then to India with the particular intention of studying the engine problems of the R.A.F. in India where aircraft and engines alike were in the worst possible state of inefficiency.

In spite of considerable difficulties and spells of ill-health he did very valuable work in India and afterwards in Egypt after his return. When he came back to England he was appointed to the R.A.F. Base at Gosport, where again he did

valuable service, besides gaining knowledge of the very latest aircraft designed for the Fleet Air Arm.

Going out of the Service as he has done with all the very latest knowledge at his finger-tips, and backed as he is by Blackburn workmanship and material, Sq. Ldr. Sandford should be a very welcome accession to Australian aviation. With his many personal friends and family connections in Australia besides his Service friends who are now in the Australian Air Force he is obviously situated so that he can be an influence for good in Australian aviation and one hopes that the Royal Australian Air Force, as the Australian Navy's Air Arm, and as the First Line of Defence of Australia's vast coast line, will duly profit by the Sandford-Blackburn alliance.

Another of the firm's most recent activities is the invasion of South America by Brigadier-General Francis Festing, C.B., C.M.G., late R.A.F. General Festing was lent by the Army to the Royal Flying Corps when General Trenchard, as he then was, took command of the R.F.C. in the Field in France. His particular work was the control of Personnel, and in that capacity he came to know, and to be known, by practically all who had to do with the Flying Corps in France.

Everybody who came in contact with him is ready to bear witness to his courtesy and kindness. Personally one owes him a very considerable debt of gratitude for all that he did for one during a visit to France at the end of 1917. And one saw enough of his work then to realise his excellence as a Personnel Staff Officer.

In 1919, when Mr. Holt Thomas started Air Transport and Travel Ltd., General Festing left the R.A.F. and joined that ill-fated firm, where, as might have been expected, he acquired the liking and good will of everybody with whom he had dealings, both the personnel of the air line and those with whom he had to do abroad.

Some time after the collapse of the firm he joined the Blackburn Company as a kind of Ambassador Extraordinary. He visited numerous Continental countries for the firm, but his particular job was to look after foreign representatives in this country who displayed interest in the firm's products. His ability as a diplomatist and his knowledge of Service requirements and Service ways naturally won friends for him among the official people in all countries. And the highly-successful deal with the Greeks was largely due to his diplomacy.

There is no doubt that in South America, where, among the Service people of Spanish and Portuguese descent, charm of personality and diplomatic courtesy counts for so much, General Festing will be gratefully received—although nobody could call him a small contribution. And his very sound working knowledge of aircraft and of the problems of the operation of Service aircraft and air traffic alike will enable him to meet the technical and commercial problems of the South American nations on an equal footing.

One bespeaks for him among one's friends in South America that welcome which when once they have met him they will gladly give him for his own sake.—C. G. C.



THE CUP-WINNER.—Sq. Ldr. Longton man-handling the Blackburn Bluebird (Gnome engine) at Lympne before winning the Grosvenor Cup.

Specify
"TITANINE"
for your Light Aeroplane

SPEED
AND
DURABILITY.

Lympne 1926
"GROSVENOR CHALLENGE CUP"

1st. Blackburn "Blue Bird."

Pilot, Squad.-Leader W. H. F. Longton, D.F.C., A.F.C.

2nd. Parnall "Pixie."

Pilot, Captain F. T. Courtney.

3rd. R.A.E. "Hurricane."

Pilot, Flight.-Lieut. J. S. Chick.

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on the above Machines.**

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE AFTERMATH OF LYPNE.

Although the Lypne Meeting is over, there are still certain points to be made clear in connection with it.

A good many people would like to know precisely who were the various officials of the Royal Aero Club who were responsible for the various and assorted imbecilities committed by the Club in the management of the Meeting. One does not consider that it is in the best interests of Aviation that anybody in particular should be put in the pillory, so-to-speak, by having his name mentioned. The individual official acting on behalf of the Club is for the moment the Club itself.

The Membership of the Club elects the Committee and the Committee appoints the officials for a meeting of this sort. If the Membership as a whole do not take sufficient interest in the Club to elect to the Committee men who are capable of running a Meeting, and the result is a Committee which is so unwise as to appoint officials who do the wrong thing, then the fault lies with the entire Membership of the Club for not electing wiser men to the Committee.

In any case it is always well to remember that in any elected body, such as a Committee or a number of Stewards, the collective intelligence of the whole body is in the inverse ratio of the number of persons appointed. That is to say, in the case of the appointment of three stewards, as at Lypne, the collective intelligence of the three is approximately equal to one-third of the intelligence of the least intelligent of the three.

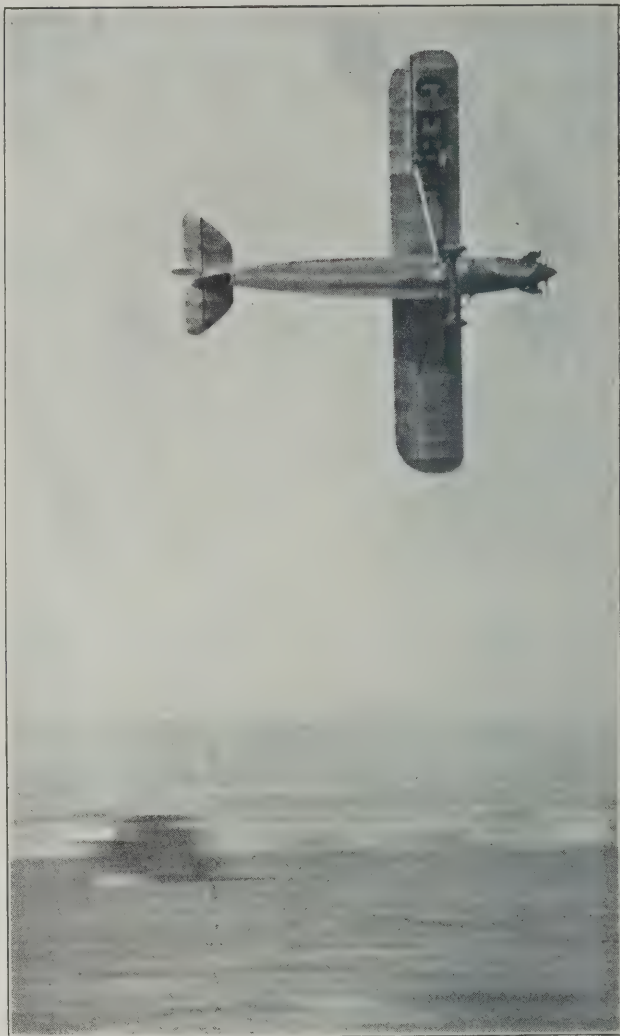
Those who have had intimate knowledge of the three Stewards as individuals and as an aggregate will agree that this formula works with very much greater accuracy than does the average scientific formula.

THE TURNING-POINT TANGLE.

A similar calculation explains quite easily the astonishing foolishness of the arrangement of the turning point and starting line in the races for the Grosvenor Cup and other races. Theoretically the arrangements, or disarrangements, of the races were made by the Racing Committee of the Royal Aero Club, of which there are ten members. Those who will take the trouble to look up the names of the said Committee will discover that several of them are distinctly threatened with intelligence, though everybody may not agree as to which of the members are intelligent and which are not. But of the



OLD RELIABILITY AGAIN.—Mr. "Cy" Holmes cornering on the single-seater Bristol Brownie (Cherub engine) in the Grosvenor Cup Race.



A RE-APPEARANCE.—Flt. Lt. Comper on C.L.A.4 (Cherub engine), the Cranwell Monoplane, which was built last year, cornering in the Grosvenor Cup Race.

total number probably not more than half-a-dozen were actually got together at Lypne.

Assuming that there were half-a-dozen, that means that the amount of intelligence available for the arrangement of the races was only one-sixth of the intelligence of the least intelligent member of the Racing Committee. And that gives only half the amount of intelligence available to the Stewards in the misconduct of *The Daily Mail* Competition.

So anyone of average intelligence will quite understand how such ponderous bricks happened to be dropped. One can only be thankful that all ten members were not concerned in the affair, for if they had been one doubts whether it would ever have been possible to fly the races at all.

A BLAMELESS LIFE.

One official of the Aero Club at any rate can be absolved from the general excommunications, anathemas, bans and other curses put upon the Royal Aero Club by the proprietors and pilots of competing machines. That is the unfortunate Secretary, Mr. Harold Perrin.

During the few days which one spent at Lypne one noticed that something was missing which had been familiar at all previous flying meetings held by or under the Royal Aero Club. And gradually one realised that it was the voice of Harold the Hearty, celebrated in verse on so many occasions in this paper in the past. Conversation was frequently interrupted by *The Daily Mail* loud-speaker, but the voice which spoke through it and contradicted itself was not of Harold.

At first one feared that the organisation of a whole week of flying had been too much for him and that he had retired to the perpetration of golf. But after a while one discovered Mr. Perrin stowed away in an office in an annexe of one of the sheds, doing real staff work on paper. Consequently he hardly showed up on the aerodrome at all, as he was tied to the office by vital affairs not exactly in the limelight but of certain interest to the Club,—as for example finance.

One admits that there is a tendency whenever one mentions the word Official in connection with the Royal Aero Club to think that the words "Perrin" and "Official" are interchangeable—the greater including the less, as Euclid says.

LYMPNE LIGHT AEROPLANE RACES

September 18th, 1926.

ARMSTRONG SIDDELEY

65-75 h.p. "GENET" Aircooled Engine
sweeps the board.

S.M.M.T. HANDICAP

Anything up to 175 lbs.

1ST, 3RD & Fastest Time

Mr. Hinkler
(Avro Avion).

Capt. Broad
(D.H. Moth-Genet).
Speed: 90.2 m.p.h.

Capt. Broad
(D.H. Moth-Genet).

GROSVENOR CHALLENGE CUP HANDICAP

Engines up to 275 lbs.

1ST, 4TH, 5TH, 6TH

The winner was a Blackburn Bluebird, piloted by
Squadron Leader W. H. Longton.

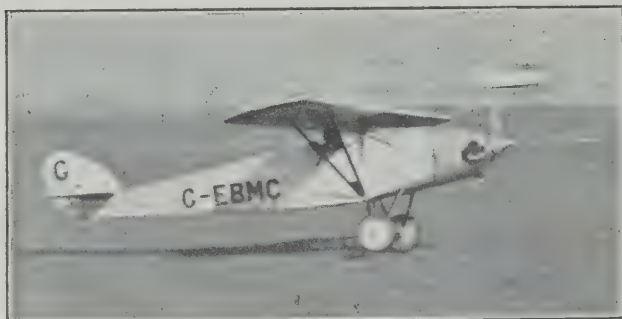
Speed: 84.95 m.p.h.

and Fastest Time

Major L. P. Openshaw (Westland Widgeon)

OUT OF 21 ENTRIES.

ARMSTRONG SIDDELEY MOTORS LIMITED.
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)
Works and Aerodrome: Coventry.
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GETTING AWAY.—Flt. Lt. Comper on the C.L.A.3 (Cherub), starting in the Grosvenor Cup Race.

But there are in fact occasions on which officials can exist outside Mr. Perrin, and on this occasion they did so with remarkable success. Consequently, to any competitor or co-optimist, who may feel inclined to take it out of Mr. Perrin for any wrongs which he may feel that he has suffered, one would merely remark, "Please, sir, it wasn't him!"

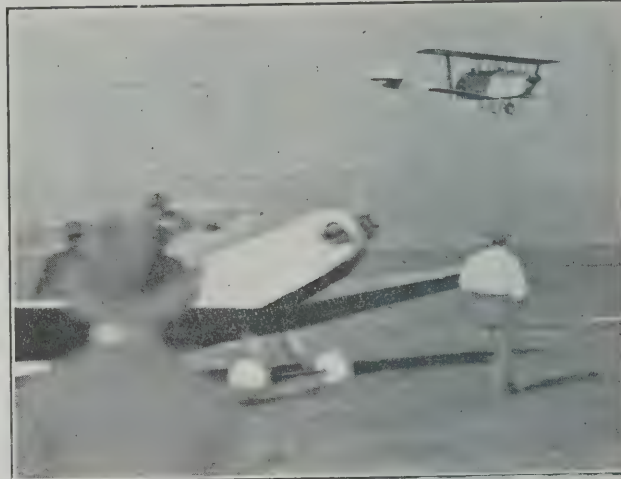
THE ONLY CASUALTY.

At least one other official must not only be held blameless but must be esteemed entirely praiseworthy. That is Mr. Goodman Crouch, the handicapper, who put up one of the pluckiest shows during the Meeting that one has seen. Mr. Goodman Crouch was in fact the only aviator who was injured during the Meeting.

In the dark ages of aviation, about 1912, a certain Monsieur Debussy came over from France with one of the comic Breguets of the period, which he proceeded to demonstrate at the Royal Aircraft Factory at Farnborough. In the course of his demonstrations he took up as passengers two young employees of the factory, named Goodman Crouch and Hereward de Havilland, and proceeded to crash them in a most accomplished manner near Maidenhead.

Debussy himself injured his head, was unconscious for a week or two, and has never been the same man since. Hereward de Havilland was hurt, but not very badly, and distinguished himself as an aviator during the War. And incidentally it was he who very kindly brought a bunch of copies of *THE AEROPLANE* from Stag Lane to Lympne early in the afternoon of Sept. 15.

Mr. Goodman Crouch broke his right foot and ankle very badly, his injuries including a fractured astragalus, a form of breakage almost unknown before aviation began, but very popular since, thanks largely to the late Dr. Graham-Anderson, who discovered the Astragalus much as Whistler discovered the Thames. Skilful surgery, by reversing bones and making artificial knuckle-joints, gave him a more or less workable ankle but so rearranged the strains that no stress-calculator would pass his foot as properly earth-worthy, all the main stresses which ought to be taken by the big toe being in fact concentrated on the fifth metacarpal. In spite



STILL AT IT.—Mr. Bulman on the Sopwith-Sigrist Cygnet (Cherub), flying in the Grosvenor Cup Race.

of that Mr. Crouch became quite a good pilot and has done a great deal of flying besides developing into our leading stress calculator, and certainly our best air race handicapper.

Some months ago, when he was enjoying a very necessary holiday as the result of almost breaking down under the strain of over-work, Mr. Crouch broke this overstressed member of his undercarriage and was still walking with the aid of a stick when he undertook the arduous duty of passing the competing machines at Lympne for airworthiness certificates. One day coming down the step from the C.A.T.O.'s office at Lympne he slipped and broke the newly-set bone.

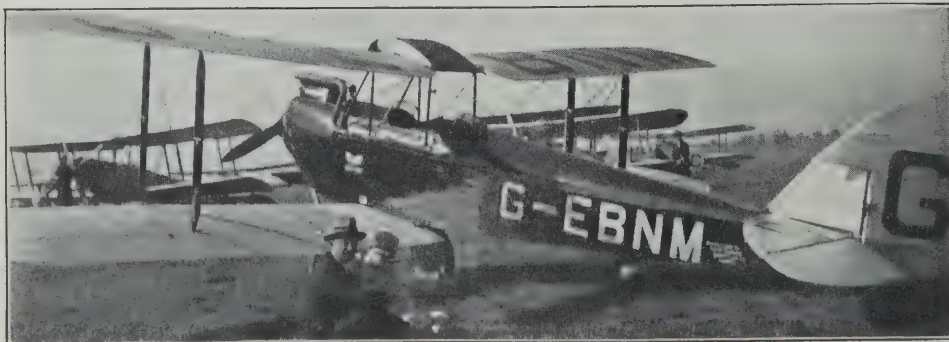
In spite of pain and inconvenience he carried on with his work most pluckily and also did the handicapping of all the races on the Saturday. Besides which he organised and handicapped the race on the Friday afternoon for the competitors who had been eliminated from *The Daily Mail* Competition. Hobbling about on a crutch he preserved all his characteristic lugubrious cheerfulness.

Naturally the local humorists renamed him Mr. Goodman Crutch and referred to him as the man who put the limp into Lympne. But everyone hopes that he will soon outgrow these misnames and will resume his normal, and nominal, attitude ready for another spring at the official problems which are continually presented to him as chief of the Stress Department at Farnborough.—C. G. G.

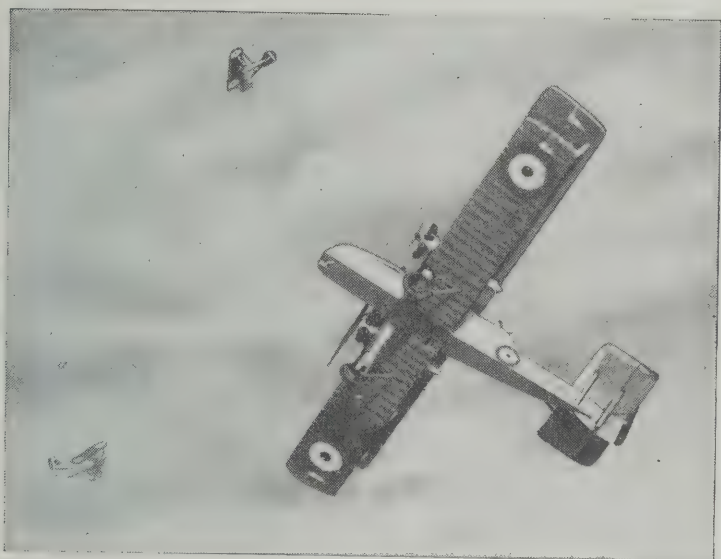
TITANINE DOPE.

In the turmoil and stress of preparing last week's issue of *THE AEROPLANE* for press there was a very serious omission. In the paragraph entitled "Making the Winners Win," no reference was made to the dope used on the winner of the Grosvenor Cup.

As a matter of fact all of the first three machines which finished in the Grosvenor Cup Race used Titanine Dope. The special blue and white Titanine racing finish on the Blackburn Bluebird were very much admired.—G. D.

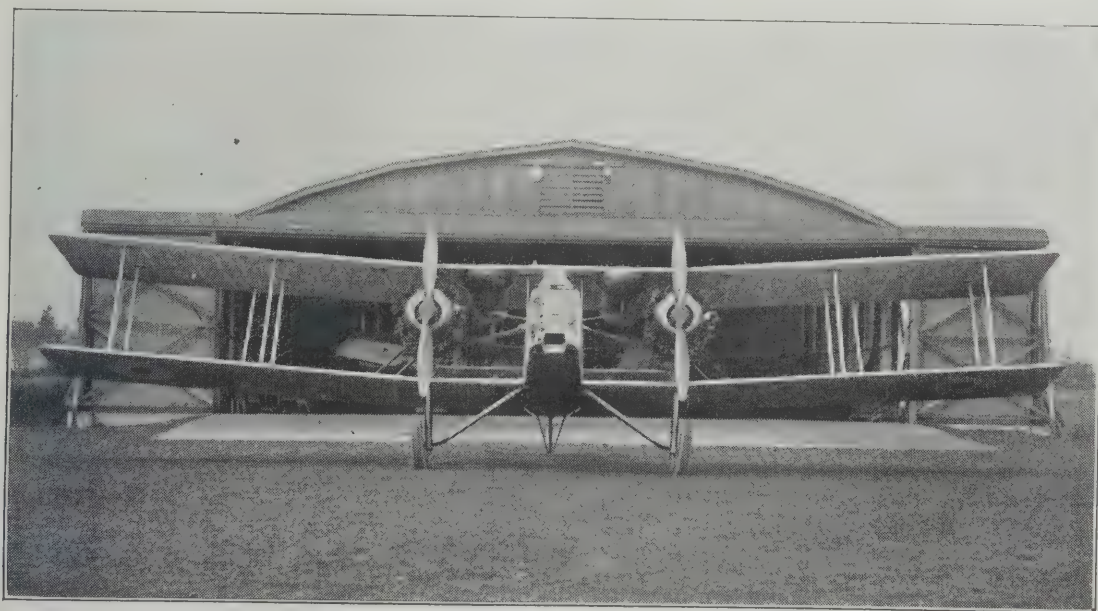


ONE OF THE LESSONS OF LYMPNE.—"The Daily Mail" Competition was organised with the intention of discovering the type of aeroplane which would best suit the Private Owner, or the Owner-Driver. In the event the four machines which completed the course were discovered to be of two-year-old design, or even older. But on the Grosvenor Cup day the air was full of De Havilland Moths, which, though they have won many races and are daily being flown all over the World, have never looked like winning a "light aeroplane" competition. Here are seen two of them. Above, the red and white King's Cup Winner—with Col. the Master of Sempill and Mrs. Sempill, who flew it in the races at Lympne, and, below, Sir John Rhodes and his own Moth, which he uses for touring.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

September 21

GENERAL DUTIES BRANCH.—Lt. D. W. Mackendrick, R.N., is granted a temp. comm. as a Flg. Off. on attachment for four years' duty with the R.A.F. (Sept. 1).

The following Flg. Offs. are transferred to the Reserve:—Class A.: I Glyn-Roberts (Sept. 22); W. H. Stiles (Sept. 25). Class B.: A. E. Pitcher, M.M. (Sept. 12).

Flg. Off. T. Fetherstonhaugh (Lt., The King's Royal Rifle Corps) relinquishes his temp. comm. on return to Army duty (Sept. 4). The S.S. comm. of Plt. Off. on probation W. F. Ward, is terminated on cessation of duty (Sept. 22).

ACCOUNTANT BRANCH.—Flg. Off. B. G. Drake is granted a perm. comm. in this rank (Sept. 22).

MEDICAL BRANCH.—Flg. Off. D. Magrath, M.B., is transferred to the Reserve, Class D.2 (Sept. 24).

MEMORANDA.—321840 Cadet H. B. Abraham is granted an honorary commission as Sec. Lt. with effect from the date of his demobilisation. The permission granted to Sec. Lt. G. Bradbury to retain his rank is withdrawn on his enlistment in the Supplementary Reserve (Aug. 27).

RESERVE OF AIR FORCE OFFICERS.—L. J. C. Mitchell is granted a comm. in Class A.A., General Duties Branch, as Plt. Off. on probation (Sept. 6).

The following Plt. Offs. are promoted to the rank of Flg. Offs.:—J. D. Sinclair (May 7); H. Lyne (June 5); C. R. A. Page (July 27); E. M. Stewart (July 27); H. M. Samuelson (Aug. 3); C. E. Baldwin (Aug. 17); A. H. A. C. Cranmer (Aug. 24); S. W. White (Sept. 7). The following Plt. Offs. are confirmed in rank (Sept. 21): J. A. Lincoln, L. R. Winter.

Flg. Off. A. L. Harris is transferred from Class A to Class C (Sept. 17); Plt. Off. S. Summerfield is transferred from Class AA, to Class C (Sept. 27); Flg. Off. H. J. de Waal relinquishes his comm. on completion of service, and is granted permission to retain the rank of Flt. Lt. (Sept. 12).

The following Flg. Offs. relinquish their comms. on completion of service:—J. S. Card, A. F. W. Finch, H. C. Peirce, H. F. J. Taylor, H. A. L. Way (Sept. 12); W. A. Rochelle (Sept. 16).

Flt. Lt. A. H. Dalton resigns his comm. on appointment to a comm. in the Auxiliary Air Force (Sept. 3); Flt. Lt. A. S. Goodwin relinquishes his comm. on account of ill-health and is permitted to retain his rank (Sept. 22); the comm. of Flg. Off. on probation S. Jones is terminated on cessation of duty (Aug. 20).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—No. 600 CITY OF LONDON (BOMBING) SQUADRON. The following to be Flt. Lt.:—A. H. Dalton (Sept. 3). The following to be Plt. Off.:—D. H. T. Lancaster (Sept. 2).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Miss K. M. Beall resigns her appointment as Sister (Aug. 13) (substituted for notification in Gazette of Aug. 27).

Appointments.

Week ending Sept. 27.

GENERAL DUTIES BRANCH.—Wing Commander J. H. A. Landon, D.S.O., O.B.E., to Station H.Q., Andover, to command, on transfer to Home Estab., 4/10.

Squadron Leaders R. C. Hardstaff, to No. 10 Group H.Q., Lee-on-Solent, 17/9. K. M. St. C. Leask, M.C., to Home Aircraft Depot, Henlow, 13/9.

Flight Lieutenants T. P. Y. Moore, E. J. Cuckney, D.S.C., C. W. Hill, and F. H. D. Henwood, D.F.C., to Home Aircraft Depot, Henlow, 13/9. J. A. Macnab, R. E. Meek, W. J. Daddo-Langlois, and A. T. S. Leguen de Iacroy, to Electrical and Wireless School, Flowerdown, 27/9. T. J. West, M.C., to R.A.F. Depot, Uxbridge, 18/9. G. M. Moore, M.C., to H.Q., Iraq, 2/9. L. G. Paget, A.F.C., to

R.A.F. Depot, Uxbridge, on transfer to Home Estab., 3/9. C. N. Ellen, D.F.C., to R.A.F. Cadet College, Cranwell, 1/10. W. Jones, to R.A.F. Station, Donibristle, 25/9. C. J. Sims, D.F.C., to No. 24 Sqn., Kenley, 10/9. F. E. Bond, to No. 405 Flight, Donibristle, 18/8. W. D. Gairdner, D.F.C., to No. 442 Flight, Leuchars, 2/8. E. H. Searle, to Station H.Q., Kenley, 7/9. C. P. O. Bartlett, D.S.C., to School of T.T. (Men), Manston, 13/9.

Flying Officers C. G. H. Du Boulay, to No. 4 Arm. Car Coy., Iraq, 1/9. E. S. Burns, to H.Q., Cranwell, 1/9. C. B. Wincott, to R.A.F. Station, Donibristle, 5/9. F. E. Watts, to No. 1 F.T.S., Netheravon, 17/9. R. O. Jones and A. F. Hutton, to Home Aircraft Depot, Henlow, on transfer to Home Estab., 28/8. C. F. C. Coaker and R. F. Findlay, to No. 29 Sqn., Duxford, 30/9. J. W. Thompson and B. F. R. M. Freeman, to No. 5 F.T.S., Sealand, on appointment to Temp. Comms., on being seconded from the Army, 18/9. R. C. Wansbrough and M. C. W. C. Flint, to Electrical and Wireless School, Flowerdown, 27/9. C. G. Hancock, A. F. Scroggs, J. B. Lynch, F. C. T. Rowe, O. R. Pigott, D. S. Brooks, H. I. Cozens, A. R. Perry, J. W. Colquhoun and P. Slocombe, to Home Aircraft Depot, Henlow, 18/9.

Pilot Officers R. C. Whittle, to No. 60 Sqn., India, 14/8. C. S. Cadell and J. H. Edwards Jones, to No. 5 F.T.S., Sealand, on appointment to Perm. Comms., 18/9. E. H. Collinson, M.C., and C. A. C. Patton, to No. 14 Sqn., Palestine, 4/9. W. A. Andrews and J. F. Lawn, to No. 19 Sqn., Duxford, 30/9. W. E. Barnes, J. Blackmore, W. G. Campbell and L. H. Mason, to No. 207 Sqn., Eastchurch, 30/9. H. C. G. Dauncey, to No. 23 Sqn., Henlow, 30/9. H. G. Loch, to No. 43 Sqn., Henlow, 30/9. T. F. Moloney, C. M. Peabody, R. T. Read and J. T. Riggs, to No. 12 Sqn., Andover, 30/9. L. G. Rumsey, to No. 39 Sqn., Spittlegate, 30/9. The undermentioned Pilot Officers are posted to No. 5 F.T.S., on appointment to S.S. Comms. (on probation), with effect from 18/9:—C. C. Bainbridge, G. Bartholomew, A. K. K. Calwell, J. F. Duff, F. G. Fairhead, G. P. T. Gibbons, M. Griffiths, H. C. D. Hayter, D. S. King, F. E. Liddell Reynolds, V. D. Morshead, J. A. Rogers, E. L. J. Rowe, H. H. R. Schleman, C. K. Turner Hughes, G. R. Weighill.

MEDICAL BRANCH.—Flying Officers E. A. Rice, M.B., and C. W. Coffey, to R.A.F. Depot, Uxbridge, 17/9. J. Hutchieson, M.B., to R.A.F. Base, Gosport, 17/9.

STORES BRANCH.—Flying Officer W. F. Langdon, to No. 601 County of London (Bombing) Sqn., Northolt, 12/9.

ACCOUNTANT BRANCH.—Flight Lieutenant H. J. Gilbert, to No. 1 School of T.T. (Apprentices), Halton, 27/9.

Flying Officers J. Charles, to No. 4 F.T.S., Egypt, 25/8. S. W. Hill, to School of T.T. (Men), Manston, 20/9. E. C. Green, to Arm. and Gunnery School, Eastchurch, 1/9.

Pilot Officers A. E. Fairs, M.C., to School of Balloon Training, Larkhill, 19/8. J. A. Stephenson, to No. 207 Sqn., Eastchurch, 1/9.

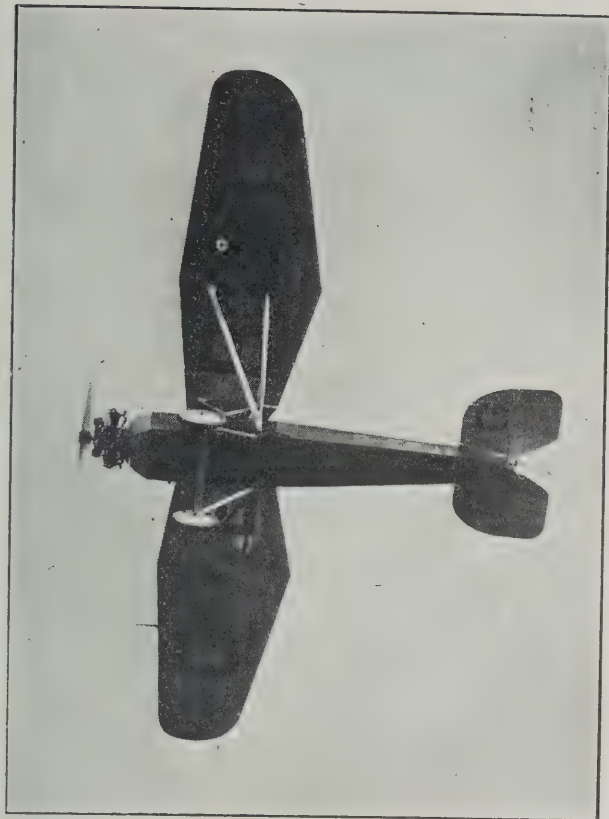
Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Biggin Hill, Kent, to a Grebe of No. 56 Squadron, Biggin Hill, on Sept. 20, Flg. Off. Henry Frederick Luxmoore, the pilot and sole occupant of the aircraft, was killed.

The Air Ministry regrets to announce that as the result of a flying accident on Sept. 22, at Attock, India, in which a Bristol Fighter of No. 5 Squadron sank in the river Indus, No. 344719 AC.1. Percy Jones, the passenger in the aircraft, is presumed to have been drowned. Flg. Off. Denniss Robinson, the pilot, sustained only slight injuries, and reached the bank of the river safely.



ACTIVE SERVICE.—A Sub-formation of No. 6 (Army Co-operation) Squadron, R.A.F., in reconnaissance leaving Hesh for Baibu in the Spring of 1926. The Julamerk and Jelu Mountains (14,500 ft.) may be seen in the background. The machines are Bristol Fighters with Rolls-Royce Falcon engines.



Fastest Time on Course.

105.5
M. P. H.

Fastest Time on Individual Lap.

106.8
M. P. H.

WESTLAND WIDGEON

with Armstrong-Siddeley "Genet" Engine, was scratch
machine in the

**GROSVENOR CUP
AIR RACE, LYMPNE, 1926.**

WESTLAND AIRCRAFT WORKS,
YEOVIL,
SOMERSET.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

H.M.S. Eagle.

The Times of Sept. 23 states:—

The aircraft-carrier *Eagle* is expected to leave Malta to-day for England to recommission. Her present ship's company joined her at Portsmouth on Feb. 26, 1924, but the vessel is now attached to Devonport for manning purposes. She should arrive there on the 29th, and will pay off and recommission, with a full crew as an independent command, on Oct. 1, for further service in the Mediterranean Fleet.

Capt. W. M. Kerr, C.B.E., will be succeeded by Capt. B. M. Money, D.S.O., hitherto Director of Torpedoes and Mining at the Admiralty.

With the transfer for the present of the *Hermes* to China, the Mediterranean Fleet will be temporarily without an aircraft-carrier, until the *Eagle* returns. The latter should be ready to leave Devonport for Malta on Oct. 16.

H.M.S. Vindictive.

The Times of Sept. 27 states:—

H.M.S. *Vindictive*, Capt. R. Howard, has been detached from the China Squadron for a cruise in Japanese waters and has arrived at Nagasaki. If the situation permits, she will also visit Kagoshima, Beppo, Miyazima, Yokohama, and Kobe. The *Vindictive* is the first cruiser of the Royal Navy to be equipped with a catapult for launching aircraft on regular service. Four of her lieutenant-commanders and lieutenants are qualified pilots or observers, and she also carries three officers of the R.A.F. under Sq. Ldr. E. J. P. Burling, D.S.C., A.F.C.

R.A.F. Co-operation with the Fleet.

In a description of the autumn exercises of the Atlantic Fleet, a Special Correspondent of *The Morning Post* on board H.M.S. *Repulse*, in Cromarty Firth on Sept. 27, states:—

With the co-operation of the sea, land, and air services an "enemy force" was landed at Shandwick, near the North Sutor of Cromarty Firth at dawn to-day and attacked the wireless station on the hill of Nigg.

Describing the disembarkation from the battle cruisers, the writer says:—

The sea made the use of landing planks impossible. The cutters immediately they touched shore broached to, and the occupants, drenched by the breaking seas, jumped overboard and waded ashore. During the operations one cutter was considerably holed. The following cutters did not attempt a landing on the open shore, but cast tows and rower hard for the shelter of Shandwick Harbour, but they were not permitted entirely to escape. It was by this time quite light, and the defending aeroplanes appeared. The cutters, caught in a bunch at the harbour entrance, were subjected to devastating machine-gun attacks by the swooping 'planes. It appeared as though no soul could survive such a fierce attack, yet there was some compensation in the fact that the *Hood* and the *Repulse* out at sea were delivering an intense covering bombardment which few aeroplanes could survive.

The casualties of the invading force were adjudged by the umpires to be heavy, but sufficient men remained to carry on to the objective. This was a wireless station situated some six miles distant over rough and hilly country. It was defended by a garrison of bluejackets rather less than half in number than the attacking force. The attack, over broken country, was prolonged and arduous.

Perhaps the honours of the day should be awarded to the aircraft, which were remarkably vigilant in their reconnaissance and contact work. The air was alive with the loud hum of 'planes, some of which were based on the carrier *Furious*, anchored in Dornoch Firth, and others on the air base at Novar, near Inverness. During the earlier stages of the operations the defending 'planes, distinguished by a long tail streamer, were particularly aggressive, and engaged the slower bombing 'planes of the invaders in exciting tactical duels.

The Cranwell Cadet College Magazine.

The Autumn, 1926, number of *The R.A.F. Cadet College Magazine* contains the second part of Air Marshal Sir John Salmond's lecture before the Royal United Services Institute on "The Air Force in Iraq." Although the lecture is an extremely interesting one, students of air warfare should not treat it as an alternative to Sir John Salmond's published Dispatches from Kurdistan, which contain full details.

Other interesting reprints in this issue are two articles called "Aeronautics," from *Punch*, by the late Flt. Lt. H. R. Hancox. Readers of *Punch* will remember these delightful articles on Fleet Co-operation, and the editor of *The Cadet College Magazine* is to be congratulated on obtaining the permission of the proprietors of *Punch* to reproduce them.

The articles from the R.A.F. overseas are not so interesting as usual, and the photographs are not so good as they might be. Are there no enterprising owners of Kodaks at Cranwell?—C. M. MCA.

No. 6 Army Co-operation Squadron.

No. 6 Squadron, Royal Flying Corps, was formed in January, 1914, at Farnborough, under the command of Capt. J. H. W. Becke, the Sherwood Foresters, seconded to No. 2 Squadron.

The Squadron was practically complete in August, 1914, and was stationed at Dover in the early days of the War, 1914-18. According to the official history of the War in the Air, orders given to the pilots of the Squadron included one which laid down that any pilot who met a Zeppelin and failed to bring it down by firing on it "would be expected to take other measures, that is to say, to charge it."

A detachment of No. 6 Squadron proceeded to Dover on the second day of mobilisation to prepare a landing ground and provide spares and fuel and a workshop for minor repairs so that there should be a fully equipped jumping-off place for the Squadrons going overseas.

No. 6 Squadron went to France on Oct. 7, 1914. Sir Walter Raleigh, in "The War in the Air," says:—"This Squadron had been stationed at South Farnborough as a reserve for the Squadrons in the field. When General Rawlinson's force was sent to Ostend, to attempt the relief of Antwerp, Lord Kitchener said, 'I want a Squadron to go with it.' He ordered that No. 6 Squadron should be ready in forty-eight hours. The Squadron was hastily completed; some pilots and machines were obtained from the Central Flying School; some machines were bought from private firms; equipment, tools and the like were collected at night; and on the 7th of October the Squadron flew to Bruges and began at once to carry out reconnaissances. On the following day they flew to Ostend, and, their transport having arrived, were concentrated on the racecourse. Five days later they retired to Dunkirk, and by the 16th of October were established at Poperinghe, where they came under the orders of Headquarters at St. Omer."

Under the scheme put into operation in November, 1914, whereby Squadrons were assembled into Wings, No. 6 with No. 5 became No. 2 Wing, commanded by Lt.-Col. C. J. Burke, Royal Irish Regiment, and operated with the II and III Corps.



IN KURDISTAN.—A Sub-formation of No. 6 (Army Co-operation) Squadron, R.A.F., having reconnaissance between Baibu and Nerva, with Gara Dagh (11,500 ft.) in the background.

The Sporting Seaplane

THE new Short "Mussel" Seaplane represents the latest achievement of the pioneers of British All-Metal Aircraft.

This light two-seater machine is a cheap, economical, and practical training unit, and, at the same time, should appeal to the sporting instincts of the private owner.

It also provides the means of development of light 'plane clubs in the coastal and inland waterway areas.

Equipped with a "Cirrus" 65 h.p. engine, and fitted with the famous Short floats constructed on the same principle as those employed by Mr. Alan Cobham on his wonderful Australian flight, the possibilities attendant upon the development of the "Mussel" Light Seaplane are unlimited.

Speed—(Sea Level) 84 miles per hour.

Landing Speed—42 miles per hour.

Rate of Climb—360 feet per minute.



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The Squadron was at this time and until 1916 equipped with B.E.2cs.

From this time until the Armistice the history of No. 6 Squadron is the history of the R.F.C. and R.A.F. in the field.

The Squadron was attached to the Middle East Command after the Armistice and was stationed at Hinaidi.

In June, 1924, it moved to Mosul to replace No. 55 Squadron and is still there.

No. 6 Squadron has never been disbanded. It is therefore the oldest squadron which has done continuous service. Squadrons Nos. 1, 2, 3, 4, and 5, have been disbanded at one time or another since the Armistice and re-formed, but No. 6 can boast of complete continuity of existence, and of being in the direct apostolic line of the old Royal Flying Corps.

The Service Cruise to Aden.

The Flight of Vickers Victoria (two Napier Lions) aeroplanes under Air Commodore C. R. Samson, C.M.G., D.S.O., A.F.C., which left Heliopolis on Sept. 16 for a long-distance cruise to Aden, arrived at Port Sudan on Sept. 17.

The Flight alighted at Massawa (Eritrea) on Sept. 18, and reached Aden at noon on the same day.

The Flight arrived at Khartum on Sept. 27, on the return journey.

Smuggling on the N.W. Frontier.

The Calcutta correspondent of *The Morning Post*, in a message dated Sept. 25 states:—

Following rumours of the smuggling of aircraft parts over the North-West Frontier, the *Gazette of India* announces the extension of the Aircraft Act to political agencies of the North-West Frontier. It forbids the unlicensed introduction of aircraft or parts into administered districts of the political agencies of the North-West Frontier of Baluchistan. Several sections of the Sea Customs Act are made applicable to the North-West Frontier.

The R.A.F. Swimming Championships.

The R.A.F. Swimming Association held their first Championship Meeting at the Holborn Baths on Sept. 24.

Considering that the Association was only formed last May the Meeting reflects great credit on the organisation, energy and enthusiasm of all concerned.

The results of the various events were as follows:—

OPEN PLUNGING COMPETITION (Challenge Cup presented by Coastal Area, R.A.F.).—(1) Cpl. J. McGinn (Henlow), (2) Flt. Lt. Mellershi, A.F.C. (Digby); 54 ft. 2 ins.

FINAL 50 YARDS OPEN CHAMPIONSHIP.—(1) AC. J. Hopkins (Henlow), (2) Flt. Off. W. H. O. Rumfitt (Bircham Newton); 29 secs.

SEMI-FINAL INTER-UNIT RELAY RACE (Handicap).—(1) Henlow, (2) Eastchurch; 68 3/5 secs. (Heat 2): (1) Digby, (2) Felixstowe; 71 4/5 secs.

FINAL 100 YARDS OPEN CHAMPIONSHIP (Challenge Cup presented by Coastal Area, R.A.F.).—(1) Flt. Off. W. H. O. Rumfitt (Bircham Newton), (2) AC. E. F. Letchford (Kidbrooke); 66 4/5 secs.

INVITATION RELAY RACE TO LONDON SWIMMING CLUBS (240 yards).—(1) St. Pancras S.C., (2) Broomfield S.C.; 2 mins. 23 secs.

INTER-SERVICES RELAY RACE (240 yards).—(1) Army (Lt. Hornby, R.E., Cpl. Sharpe, 1st Bn. Scots Guards, Bmbdr. Rex, R.A., Lt. Mackillop, R.E.), (2) R.A.F. (AC. Letchford, AC. Belcher, Cpl. McGinn, AC. Hopkins); 2 mins. 23 1/5 secs.

OPEN DIVING CHAMPIONSHIP (Challenge Cup presented by R.A.F. Depot, Uxbridge).—(1) AC. L. Richards (Biggin Hill), (2) L-AC. Miles (Halton).

FINAL INTER-UNIT RELAY RACE (Challenge Cup presented by the R.A.F. Halton).—(1) Henlow, (2) Felixstowe; 68 2/5 secs. Eastchurch finished second but were disqualified.

INTER-UNIT WATER-POLO CHAMPIONSHIP (Challenge Cup presented by the R.A.F. Football Association).—Henlow beat Eastchurch by 2 goals to 1. The Henlow team were: Goal, L-AC. Nicholson; right back, L-AC. Stohart; left back, L-AC. Andrews; half-back, Cpl. Guest (Capt.); right wing, L-AC. Withers; centre forward, Cpl. McGinn; left wing, AC. Hopkins.

At the end of the Meeting the prizes were distributed by Air Vice-Marshal C. L. Lambe, C.B., C.M.G., D.S.O., President of the Association.

AN R.A.A.F. PACIFIC FLIGHT.

On Sept. 28, Group Capt. R. Williams, D.S.O., O.B.E., Chief of the Australian Air Staff, Flt. Lt. McIntyre, Sjt. Pilot Trist, and a mechanic, left Melbourne on a D.H.50 seaplane (240 h.p. Siddeley Puma engine) on a flight through the Pacific islands and back.

They arrived at Melbourne 9 1/2 hours later the same day.

The route to be followed will be via Queensland, Thursday Island, Port Moresby in New Guinea, Rabaul in New Britain, Kita in the Ellice Islands, Vanikoro, the Tonga Islands, Noumea in New Caledonia, Suva in the Fiji Islands, to Apia in Samoa.

The length of the outward flight is roughly 8,700 miles. The exact route of the journey is not yet known.

The object of the flight is to acquire knowledge of the mandated territories of the British possessions in the South Pacific Ocean, and at the same time to investigate the flying conditions in the Pacific and the effect of the climate of these regions on the structure and performance of a standard seaplane, engine and metal floats.

WARSAW—TOKYO—WARSAW.

On Sept. 25, Capt. Orlinski, of the Polish Air Force, completed his flight from Warsaw to Tokyo and back on a Breguet XIX biplane (450 h.p. Lorraine-Dietrich engine). He covered the last stage of his flight, from Moscow to Warsaw, a distance of over 700 miles, in 6 hours 15 mins.

ANOTHER ABORTIVE RECORD ATTEMPT.

On Sept. 26, M. Coste and Lieut. de Vitrolles left Le Bourget at 06.00 hours on a Breguet XIX biplane (500 h.p. Hispano-Suiza engine) in an attempt to beat the World's record for distance flown in a straight line. They flew in the direction of East Africa, hoping to reach Lake Victoria Nyanza.

After covering roughly 2,445 miles, they were forced to land at Assouan in Egypt with water-pump failure.

COMMANDER BURG.

It is with great regret that *THE AEROPLANE* records the death, on Sept. 26, at Purley Cottage Hospital, as the result of a flying accident at Whyteleafe, of Commander Robert A. Burg, United States Navy, Assistant Naval Attaché (Aviation) at the American Embassy, London.

Commander Burg was flying as a passenger in an American D.H.4B machine which was kept at the R.A.F. Aerodrome at Kenley for the use of the American Air Attachés. The machine made a forced landing, apparently owing to engine failure, and caught fire.

Major C. L. Tinker, Assistant Military Attaché (Aviation) of the American Embassy, who was the pilot of the machine, was also injured, but is recovering.

Commander Burg recently succeeded Commander John Towers, U.S.N., one of the pioneers of American Naval Aviation. Though he had only been a short time in England, he had already made many friends in the aeronautical community, both Service and civilian. His unfailing good-fellowship and his quiet humour made him welcome wherever he went, and everything augured well for his tour of service in this country.

On behalf of British aviators in general one offers sincere condolences to the United States Naval Air Service.—C. G. G.

LAWRENCE LANDER CARTER.

It is with deep regret that one has to record the fact that Mr. Lawrence Lander Carter, known universally as Larry Carter, died at midnight on Sunday, at Cheltenham, at the age of 28. The immediate cause of his death was meningitis.

Since his recovery from the long illness consequent on his accident at Martlesham last year, he has been doing liaison work between the Gloucestershire Company and the squadrons of the R.A.F. equipped with Gloucester machines. As recently as last Wednesday he put in a very valuable report to the Company of the present state of affairs.

Just before the Lympne meeting he had an attack of malaria, and, hardly recovered from this, he came to Lympne where, one thought, he looked extremely ill. He was taken ill on Friday and went to a nursing home at Cheltenham, where he died on Sunday.

Larry Carter was one of the original band of A. T. and T. pilots who kept the Paris Service running with such efficiency through its first Winter.

When A. T. and T. closed down Larry Carter made a number of flights to Spain, delivering machines for the Bristol Company and the Aircraft Disposal Company. On one occasion his father, Col. Carter, accompanied him.

In 1922 he joined Handley Page Transport Ltd. and for a year flew again on the Continental Services. About this time, just after Britain had failed to win a big International Air Race, Larry Carter expressed to one his disgust at the way certain British pilots had failed to do themselves and their machines justice, and he said that he would like to have a cut at a big race himself.

Accordingly he applied to the Gloster Company for a job as tester, and in April, 1923, he was duly appointed to the position of their chief test pilot.

He won the Aerial Derby in 1923 on the Bamel (he had won the handicap on a Bristol monoplane the previous year) and later on distinguished himself abroad on a Gloster Grebe. On the various kinds of Gloster machines he made many notable flights and tests, and in June, 1924, he went to Cranwell to fly the Gloster-Napier II.

When flying at over 200 m.p.h. the tail developed flutter and the machine hit the ground and was wrecked. Larry Carter was very seriously injured and never properly recovered. This crash, together with two previous injuries, undoubtedly contributed towards his death, if they were not entirely responsible for it.

To his relatives one offers one's deepest sympathy and also to his many friends. The Gloucestershire Company and the aeronautical community have lost a valuable worker.—G. D.

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THE LANCASHIRE CLUB'S SECOND MEETING.

The Lancashire Aero Club's second Flying Meeting, held on Sept. 26, at the Woodford Aerodrome was the kind of success that Lancashire makes of most things when it goes after them seriously.

In spite of threatening weather and a very low temperature something between 20,000 and 25,000 people went to Woodford, and got there in spite of its being one of the least accessible aerodromes in England. And they certainly had very good value for their money. Something like forty entries were received for the various flying events and besides the competitions there was some very good exhibition flying.

Wing Cdr. Philip Babington, M.C., A.F.C., brought over several machines from No. 5 Flying Training School at Sea-land. These did some useful formation flying and put up a very good fight between a Bristol Fighter and a Sopwith Snipe. Actually of course such a fight ought to have been staged as a reminiscence of the War 1914-18, much in the spirit in which at the Royal Tournament at Olympia troops of to-day perform in the uniforms of the Waterloo period or earlier. But one fears that a good many of the twenty and odd thousands may have received the impression that it was an exhibition by modern war machines.

Some very fine exhibition flying was also done by Mr. Frank Courtney on a Nimbus Martinsyde lent by A.D.C. Aircraft Ltd.; by Mr. Hubert Broad on a Moth; and by Flg. Off. H. R. D. Waghorn on an Avro Gosport with the new Avro radial engine—which is apparently to be known officially as the Avro Alpha, although some people would prefer to call it the Miracle, seeing that it put up such a wonderful performance when first asked to run. Mr. Waghorn is an ex-Cranwell cadet and is now at the Central Flying School.

Mr. Neville Stack, the chief instructor and aerodrome manager of the Lancashire Club, also gave a very fine flying display. And by way of contrast Sq. Ldr. Longton gave an exhibition of crazy flying. How he manages at one moment to be a pilot of a vast bombing pantechinon, at another to be a pilot of a highest speed fighter, at another to be a winner of a light aeroplane handicap and at another to be a crazy flyer, passes comprehension.

So far as the members of the Flying Clubs are concerned, chief interest centred in the Inter-Club Relay Race for the four silver tankards about which there has been a certain amount of back-chat in these pages of late. It may be remembered that Yorkshire expressed their intention of taking the tankards away from Manchester, and that Newcastle remarked that it was rather a pity Yorkshire had decided to do so because they had rather thought of taking the tankards themselves. In the event Newcastle did take the tankards.

In this race the pilots stood on one line with the machines on another line some little way ahead. At the start No. 1 pilot of each team ran to his machine, flew round a short course in full view of the aerodrome and then landed as near as possible to his original mark, taxiing onto it if short and pulling his machine back single-handed if over. He then ran back to the waiting No. 2 pilot who repeated the performance and so on to the last pilot who flew round the course and over the finishing line.

In the first heat Messrs. Sparks and West, of London and Yorkshire respectively, stopped in spectacular and skilful fashion within a few yards of their marks but unfortunately later pilots of these teams, coming in at racing speed over the edge of the aerodrome overshoot the mark so badly that one pilot in each team practically collapsed in the endeavour to pull his machine back. Consequently the rules were altered in the middle of the race so as to allow the next pilot in order to go out and help pull the machine back. This was a pity as it rather spoiled one of the objects of the race, and as a matter of fact all the later pilots succeeded in getting down reasonably near the mark and could have managed without assistance.

Lancashire, who had made the rules and knew the aerodrome, flew their slowest machine and made no mistakes in the matter of overshooting, but under the altered condition this gave them no advantage over Newcastle, who were overshooting by a short distance only. The latter Club, flying with excellent judgment on a strange aerodrome, won the second heat by nearly a quarter of a mile and went on to win the final by almost a lap.

The race was much appreciated by the crowd and involved no risk of collisions as each team had to keep to one side of a white line on the aerodrome.

The Yorkshire Aeroplane Club beat the London team in the first heat, the London team withdrawing because one of the members damaged a wheel so that the last member of the team could not get off. In the second heat the Newcastle Club easily beat the Lancashire Club. And in the final Newcastle beat Yorkshire almost as easily, the Yorkshire team not being quick enough in landing and being too slow in changing pilots.

The Inter-Club Members' Race was won by Mr. M. Lacayo of the Lancashire Club, with Mr. Colin Parker, Auxiliary Air Force and Lancashire Club, second, and Mr. M. B. Lax, Yorkshire Club, third.

The Open Handicap Race, for which there were eighteen entries, was held over a 28-mile course, with turning points at Marple and Knutsford. The winner was Mr. Waghorn on the Alpha-engined Gosport Avro, so the new Avro engine starts her official career under happy auspices. The Blackburn Bluebird (Genet engine) piloted by the firm's test pilot, Mr. N. Woodhead, was second, and the Avro Avian (Genet engine) piloted by Mr. Bert Hinkler, was third. So our three newest radial engines had quite a day out. Mrs. Lynn on a S.E.5a was fourth and Mr. Courtney, who was giving 8 mins. start to the Moths, was fifth.

Incidentally the speed of the winning machine, which is pretty nearly the size of the standard 504K Avro, was 105 m.p.h. although the

Alpha engine is only supposed to give just over 100 horse-power. It strikes one that a touring aeroplane built for speed and carrying-capacity and not for training purposes and fitted with this engine would be a very pleasing property.

The Landing Competition, which was for Club Moths only, and excluded pilot instructors, was won by Mr. R. R. Williams, of the Lancashire Club, with Mr. S. Todd, of Newcastle, second. There was a tie for third place between Mrs. Lynn and another London Club pilot.

The Director of Civil Aviation, Sir Sefton Brancker, was present, and said that the meeting was one of the best that had been organised by civil aviators.

An official deputation of the Blackpool Corporation came to the Meeting with the idea of seeing what could be done about having a flying meeting at Blackpool, presumably next year. The deputation was so impressed by the excellence of the show that they promptly invited the Lancashire Club to arrange their meeting for them.

The whole performance was ended by a Set Piece in the best R.A.F. Pageant style, the subject being an attack from the air on an enemy mine layer.

As the Meeting was run without the interference of any of the officials of the Royal Aero Club everything went off very well. And the Lancashire Club is to be congratulated on the success of a show which besides being a moral victory must prove to be of considerable financial advantage to the Club.

The names of the officials who ran the Meeting so successfully deserve to be placed on record. They may be useful to other people who want to run successful meetings. They are as follows:—Clerk of the Course: Mr. J. F. Leeming; Chief Marshal: Mr. J. Cantrill; Marshals: Messrs. T. Prince, F. Gattrell, H. Stern, R. H. Dobson, and A. Goodfellow; Secretary: Mr. C. J. Wood.

A special word of praise is due to the compiler of the programme, who not only laid out all the events in the clearest possible manner but put into it a lot of very interesting reading matter about joining the Club and popular flying and the safety of flying and so forth which cannot fail to have good effect on as many of the tens of thousands of spectators as managed to secure copies.

Evidently the pre-Pageant propaganda was effective, for besides the 20,000 or so people who paid for admission there must have been at least 100,000 others outside the aerodrome as what our German friends call "hedge-guests." Apart from cars parked along the roads for miles around, whose occupants were too "close" to pay for admission, the police reported that they had to deal with a queue of 4,000 cars from the aerodrome itself. The fact that such a quantity managed to get in and out along the narrow lane leading from the main road to the aerodrome bears witness to the excellent co-operation of the police with the Club.

The educative value of the Display must have been immense. All those thousands of people knew that the machines had come from all over England through the storms of Saturday and Sunday morning. They saw the show through from start to finish dead on time except for one minor delay when an obstinate engine objected to being started by hand. They saw a magnificent display of flying in almost all its phases done by pilots whose experience ranges from several thousands of hours done to less than 20 hours. And in the whole afternoon they saw just one accident, which was when a Moth's tyre punctured and the tube had to be replaced.

Apart from exclamations of admiration for the flying the most frequent comment among the crowd seemed to be "How easy and safe it looks." This is the kind of impression one wants to see created in the public mind instead of the idea that the pilots are heroic experts flirting with death. That may draw a crowd, but it does not create confidence in the future success of Civil Aviation. Even the excellent acrobatic flying seemed to impress the crowd with its safety, because it was properly done at a safe height.

THE CHERUB IN GERMANY.

In a letter recently received by the Bristol Co., Herr Eberhard von Conta, the owner of the Messerschmitt Light Aeroplane, which is fitted with a Bristol Cherub Series III engine, announces that he recently climbed on this machine to 5,000 m. (16,400 ft.) (barograph height) above sea level, and that he ceased to climb only because the recording barograph would record no further. Investigation of the chart by Prof. Dr. Madelung showed that the machine had by no means attained its ceiling.

This engine had then run 65 hours with no adjustment except the change of one sparking plug.

In a recent competition at Mannheim the same machine won first prize in the technical performance tests and 25 per cent. higher marks than the next competitor.

Herr Conta proposes in the near future to fly from Munich to Verona over the Alps carrying a passenger.

THE CHERUB IN AMERICA.

A telegram from New York states that the Heath Tomboy Monoplane with a Bristol Cherub III engine won The Dayton Daily News Trophy at the National Air Races at Philadelphia. Light aeroplanes in large numbers were entered for this race and the triumph of the Cherub, coinciding as it did with the Cherub's triumph at Lympne, is therefore the more noteworthy.

What makes the victory still more interesting is the fact that a Bristol Cherub Mark II was in the Powell Racer which won every First Prize in the light aeroplane class at the Pulitzer Trophy Meeting on Long Island, N.Y., last year.

ALABAMA BOUND.

After the recent storm that swept over Florida and Alabama it was found that thirty-five aircraft belonging to the Pensacola Naval Air Station in Florida had been destroyed.

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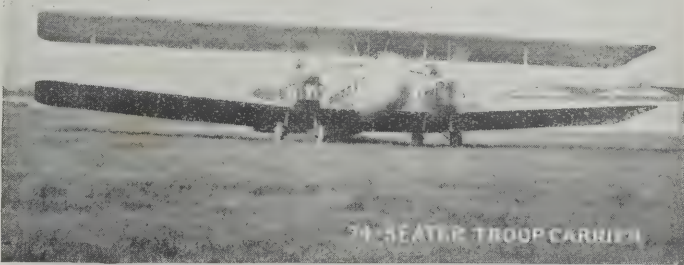
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Approx. Full Speed...108 m.p.h. Minimum Speed...46 m.p.h.

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THE LEICESTER PARACHUTE ACCIDENT.

The adjourned inquest on Mrs. Dorothy Cain, who was killed while attempting to make a parachute descent from an Avro belonging to the Surrey Flying Services at Leicester on Sept. 9, was resumed on Sept. 24.

Mr. A. F. Muir, the pilot of the machine, said that he had made descents himself and had been in charge of over 100 descents, 31 of them this year. He attached the cable of the parachute, a Guardian Angel, to Mrs. Cain's harness himself after she got into the machine, and he was positive the cable was attached when she stepped out of the machine. In reply to Mr. Cain, Mr. Muir agreed that it would be difficult to release the spring (that is presumably the quick-release catch between the harness and the parachute cable) if the cable were kept tight, and that Mrs. Cain was the only person who could have undone it.

Mr. Lacroix, Mr. Muir's mechanic, said that he steadied Mrs. Cain as she got out and stood on the wing holding onto the fuselage. She slipped off, and the cable, which had been properly attached, went with her. He looked over the side, and then saw that the cable had become disconnected and that she was going down without the parachute. In reply to the Coroner he said that if she had made a grab at the release device he would not have seen it as she had her back to him.

Major Cooper, of the Accidents Investigation Sub-Committee of the Air Ministry, said that he was satisfied that the harness, quick-release, life line, and cable were in accordance with design. Everything was intact and in working order.

The Coroner, commending the use of parachutes in case of emergency, said that he felt strongly that novices should not make descents as an exhibition and he was glad that since this case the Air Ministry had decided that descents should not be made without a permit.

A representative of the Guardian Angel Parachute Company asked to be allowed to correct a statement that the accident was due to a fault in the parachute. The Guardian Angel parachute had made 3,000 descents, 1,500 of them being live descents and had never yet failed. The Coroner said that there was no evidence that the parachute had failed and hoped that the Press would be good enough to say so.

No comment on this accident has appeared in THE AEROPLANE as it would have been improper to say anything until after the inquest. From the evidence it is fairly clear that the unfortunate Mrs. Cain herself released the parachute cable from the harness while in the act of leaving the wing of the machine.

The Guardian Angel, like most parachutes, is fitted with a quick-release device so that if after landing the parachutist is likely to be dragged into danger by the wind blowing the parachute along the ground the parachute cable can be released from the harness by operating a device, something like a pair of scissors, which opens a spring catch. The assumption is that Mrs. Cain as she went off the wing, and before the strain on the cable pulled the catch tight, instinctively grabbed at the point in the harness where the cable was joined to it, a most natural action under the circumstances. Presumably in doing so she caught the catch of the quick release, with the result that when the cable pulled tight it simply slipped out through the catch.

One has been more or less closely in touch with parachute developments ever since parachutes have been used in connection with aeroplanes and one has never heard of a Guardian Angel parachute failing as a parachute. The only fatality one can remember is that of Mr. Boyle. In his case the spring hook, of the dog-collar type, which held the parachute cable to the harness, straightened out as the strain came on, owing to its being made of material which was too light or too soft. The result was that, as in the accident to Mrs. Cain, the parachute was never pulled out of its case at all. That was in the very early days of the Guardian Angel and since then there has been no instance of any part of the material or mechanism breaking or failing to act.—C. G. C.

THE KEMPSTON BALLOON ACCIDENT.

At the adjourned inquest on the bodies of Mr. and Mrs. Crowsley and Mrs. Harbage, who died following injuries received in the fall of the captive balloon at Kempston on Aug. 3, Major Cooper, Inspector of Accidents for the Air Ministry, gave evidence that the balloon failed as the result of stresses which it was not designed to stand. The pilot's practice of climbing on the net was ill-advised, and might have caused damage which contributed to the accident.

Forty-three meshes of the net were broken—which meant a tear half-way round the net. All fractures occurred at the knots, and although the general depreciation of the cordage was only about 20 per cent., there was marked and abnormal weakness at the knots. In places the cordage had been rubbed and chafed.

The balloon was certified as airworthy, but a permit to fly it as a captive balloon—which was necessary under the regulations—had not been obtained.

The jury returned a verdict of accidental death.

A NEW CRASH-AND-BULLET-PROOF TANK.

A new type of protection for petrol tanks which appears to have marked advantages has recently been produced by Major H. H. Evans of 24, Craven Street, Strand, W.C.1.

The material used is of a gelatinous nature, which can be melted and cast round any type or form of petrol tank with the aid of a correctly formed mould, the only preliminary treatment of the tank which is necessary being the application of a coating of an adhesive varnish.

The protective coating used is about $\frac{1}{8}$ -inch thick, and such a coating appears to be entirely self-sealing, if punctured either by bullets or by instruments such as punches and screw-drivers driven through it. Also it can be deformed to an almost unlimited extent without splitting or tearing.

Major Evans recently gave a demonstration of the new proofing to a representative of THE AEROPLANE. The "Tank" used was a cylindrical tin about eight inches high by four inches in diameter, coated with $\frac{1}{8}$ to $\frac{1}{4}$ -inch of the proofing material.

A couple of revolver bullets had been fired into it, one passing right through, and another passing through both sides of the tin, and remaining embedded in the proofing on the far side. In addition, numerous holes had been punched through, so that it was difficult to discover any space where fresh holes could be made through the tin itself. Such places were however found and a number of new wounds were made by driving in a screw-driver with a hammer.

The tin was then filled with petrol, and a match applied to the wounds so made. Not enough petrol to ignite had escaped.

The "tank" was then thrown violently onto a stone-flagged floor. The seam at the bottom of the tin opened for an appreciable distance, but the proofing retained complete petrol-tightness.

The general principle of this form of proofing is the same as that of the better-known rubber proofing methods. The advantage is claimed that rubber, with its inevitable tendency either to perish or to grow brittle, is not used, and it is claimed that Major Evans's proofing retains its plastic character indefinitely. Moreover, it is cheap, easily produced and easily applied, and, unlike rubber, is not in itself inflammable.

It adds appreciably to the weight of the tank to which it is applied—about $\frac{1}{2}$ lb. per sq. ft. of surface covered to $\frac{1}{8}$ -inch thickness. But although this is a drawback, it is not one which should interfere with the use of such tanks if in fact a really crash-and-bullet-proof tank can be produced.

It is quite true that petrol is not usually a direct agent in causing an outbreak of fire in the event of a crash. But it is the risk of a tank failing and releasing a large quantity of petrol which constitutes the chief danger of a fire (however started) in such an event.

If the petrol remains in the tanks, the fire will spread relatively slowly, uninjured occupants of the machine have a chance to escape from the wreck, and disabled occupants a chance of being rescued. If any large quantity of petrol is liberated, however, there is a burst of flame of such size and intensity, that either escape or rescue may be entirely impossible, and thus a burst petrol tank may turn an ordinary crash into a very distressing fatal accident.

Certainly for civil machines the few odd pounds of extra weight ought not to interfere with the use of protected tanks, if these can be shown to give any appreciable reduction of such risks. For military aircraft conditions are somewhat different, but the value of a bullet-proof tank in warfare scarcely needs to be emphasised.

It is to be hoped that the merits of Major Evans's proofing material will be fully investigated, and that the results, if satisfactory, will form a basis for prompt action.

Some years have now passed since prizes were awarded to the Silvertown Co., Mr. Imber and Commander Boothby for three different types of safety tanks, but R.A.F. personnel and civilian aviators continue to be burned to death through the bursting of ordinary unprotected tanks. So far as one can gather progress is being blocked as usual by one or other of the permanent obstructionists among the Air Ministry's technical experts.

THE STALLED LANDING.

On Sept. 8 in the Croydon Notes the statement was made that the three-engined F.VIII Fokker monoplane is an excellent flying machine but takes rather a long run on landing owing to the fact that when its tail skid is on the ground the wings are not at a very big angle of incidence and so do not tend to act as air brakes to the extent that the wings on certain other machines do.

Mr. B. Stephan, the European manager of the Fokker Company, points out in reply that it certainly is true that some pilots who have not had extensive practice in landing Fokker machines do not take full advantage of the very low stalling speed—one might almost say the absence of stalling speed—which is characteristic of the firm's machines. Pilots who only occasionally have an opportunity of flying Fokkers naturally do not care to try for themselves whether this machine is as

fool-proof as it is claimed to be. Consequently they keep on the safe side by landing the machine at what would be a normal speed for most other machines. But when the extremely low stalling speed of the Fokker is understood, and when pilots get to know the feel of the machine, they learn that the flying speed of the machine can be so reduced before touching the ground at all that the run after touching becomes very short.

Anybody who has watched the landings made on all types of Fokker machines by the K.L.M. pilots coming into Croydon will notice that the run of the machine after touching is certainly not excessive.

It is worthy of note that a number of these Fokker machines which are habitually used on small aerodromes in America have been fitted with wheel brakes. These however are not fitted as a rule as the firm is of the opinion that in the hands of an experienced pilot on the usual large European aerodrome the machines do not need brakes. And one may add as one's own personal opinion that a pilot who has not had considerable experience of the machine and tries to depend on the brakes may find that they actually impart an element of danger.

Apropos the three-engined Fokker which was bought by the Air Ministry, one hears a remarkably high opinion of it expressed by R.A.F. test pilots who have flown it quite considerably. They all seem to agree as to the extraordinary controllability of the machine when sinking below stalling point. In fact one hears that the practical people at Martlesham are so impressed by its fool-proofness that the theoretically scientific people hardly believe their reports, and that in consequence the machine has been sent to Farnborough so that the bright brains there may be allowed to study its aerodynamic characteristics with the idea of discovering how Mr. Fokker manages to make a fool-proof machine while with all their own experiments, which they have now been carrying on for years, in the problem of control below stalling point they have still not produced any method of saving the lives of R.A.F. pilots who are still compelled to fly out-of-date war-type machines.

AN IRISH FREE STATE CASUALTY.

Two officers of the Irish Free State Air Force were killed at Hempstown Common, near Dublin, on Sept. 21 while flying a Bristol Fighter during the annual Curragh and Eastern Command Manœuvres.

The officers were Lieut. T. J. Prenderville and Cadet O'Reilly.

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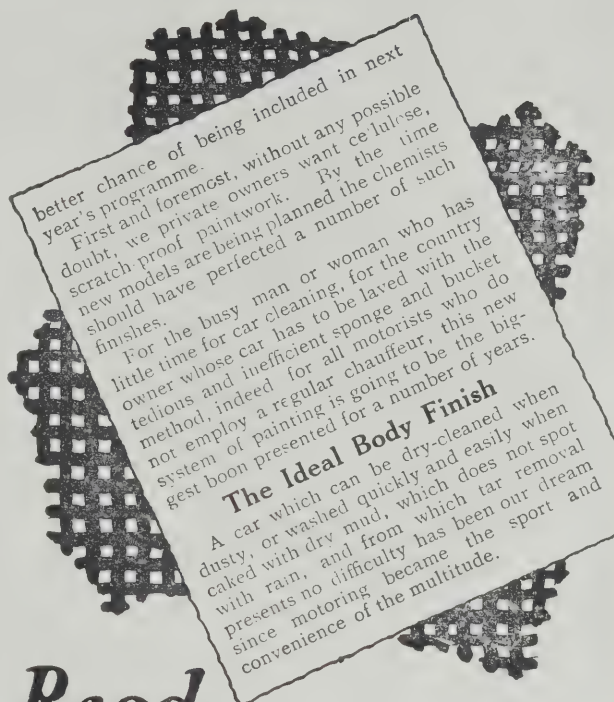
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THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Sept. 26.

Total flying time during the week 51 hrs. 15 mins.

The following members had flying instruction:—Lady Bailey, Miss O'Brien, H. R. Presland, G. Vlasto, W. L. S. McLeod, R. L. Portway, P. O. A. Davison, H. Spooner, H. Solomon, A. S. Richardson, G. Black, R. A. St. John, B. B. Tucker, A. L. A. Petty, G. N. Howe, E. A. Lingard, H. F. Wright, O. J. Tapper, O. H. Best, E. K. Blyth, G. Lyon, Major Beaumont, D. Usher, J. G. Crammond, J. H. S. Garne, Sir John Rhodes, J. H. Saffery, F. W. K. Martino, G. Terrell, G. C. Bonner, F. Clarkson, L. J. C. Mitchell, T. C. Sharwood.

The following members flew solo:—E. E. Stammers, A. G. D. Alderson, R. L. Portway, E. S. Brough, O. J. Tapper, N. Jones, E. D. Moss, G. Terrell, L. J. C. Mitchell, Lady Bailey, W. Hay, E. L. O. Baddeley, B. B. Tucker, E. K. Blyth, A. H. M. Lees, G. H. Craig, Miss O'Brien, Major K. M. Beaumont, R. Malcolm, R. C. Presland.

The following members had joy-rides:—Miss Wilson, A. Southgate, H. Spooner.

R. C. Presland successfully completed the tests for his Aviator's Certificate on the 22nd.

On Saturday, the 25th, Mr. Norman Macmillan and Sq. Ldr. M. E. A. Wright kindly assisted in giving flying instruction to members.

There have been two crashes during the month on G-EBLI and G-EBNP, the members concerned being Miss O'Brien and G. H. Dalton, both flying solo. The necessary repairs have been completed and the two machines are now in use again.

The Lancashire Aero Club.

Report for week ending Sept. 21.

The weather did not interfere with flying during four days. Total time for the week 42 hrs. 25 mins.

Owing to pressure of work in connection with the Display details are omitted this week, but the outstanding features were the amount of dual put in by Mr. Birley and the number of joy-rides given by Mr. Goodfellow. Fifteen hours' flying were done on Sunday, the 10th, which created a Club record.

The Club is entering two machines for the second Yorkshire meeting and thereafter Mr. Stack and the ground staff are being given a few days' well-earned rest. Will all members please note accordingly that the aerodrome will be closed from the night of Sunday, Oct. 3, to mid-day on Saturday, the 9th.

STOP PRESS.—The second Display was a complete success. Despite shocking weather on the Saturday all the competitors arrived safely, though all of them had rough passages, notably the Newcastle and Yorkshire Clubs across the Pennines, Mr. Hinkler on his long journey from Southampton in the little Avian, and Mrs. Elliot Lynn, who made a very fast non-stop flight from London through the worst weather of the day.

The Club tenders its very sincere thanks to the London, Newcastle and Yorkshire Clubs for their support, the many famous pilots who gave displays of aerobatics throughout the afternoon, the aircraft firms who sent machines from such distances to compete: and last, but not least, the R.A.F., who put up a fine show with Bristol Fighters and Sopwith Snipes from No. 5 F.T.S.

The Midland Aero Club.

Report for week ending Sept. 25.

Total flying for week 12 hrs. 10 mins.

One machine only serviceable owing to LW being prepared for renewal of Airworthiness Certificate.

The following members had instruction:—Capt. Chaytor, Messrs. Fellowes, Smith, Swann, Brinton, Brighton, Gibbons and Willis.

The following members flew solo:—Mr. C. Knox, Mr. E. J. Brighton, Mr. G. Perry, Mr. W. Swann.

The Austin Whippet was down solo by a pupil for the first time on Friday last, and with Mr. H. Willis as pilot performed successfully.

The Hampshire Aero Club.

Owing to the indisposition of the usual noter, the usual weekly report has been delayed. One learns, however, that Mr. Thomson, the Club's chief instructor, on one of the Moths, escorted the transport *Assaye* down Southampton Water as the ship was leaving for Egypt with officers and men of the R.A.F. on board.

THE INSTITUTION OF AERONAUTICAL ENGINEERS

The new session of the Institution of Aeronautical Engineers opens on Tuesday, Oct. 12, with a paper by Mr. M. L. Bramson on "Unsolved Aeronautical Problems," which will be read at the rooms of the Junior Institute of Engineers, 39, Victoria Street, S.W.1, at 6.30 p.m. This title of the paper is singularly provocative, and it is to be hoped that there will be a goodly attendance to argue with Mr. Bramson on the particular problems which he intends to raise and to suggest others of equal importance.

In Mr. Bramson's paper the problems of maintaining constant propulsive power at varying altitude, of converting fuel energy directly into thrust without the intervention of a complicated engine mechanism, of the variable surface wing, of machines to ascend and descend vertically, of landing in fogs, of producing the ideal aerial structure, of the central engine-room type of aircraft, and of the attainment of

ultra-high speeds over long distances by flying at great altitudes are to be discussed, briefly but illuminatively.

The programme for the remainder of the session promises exceptional interest. It includes the following:—

Nov. 16.—Mr. A. G. von Baumhauer (of the Royal Aeronautical Laboratories, Amsterdam) on "The Possibilities of Progress in Aviation."

Nov. 30.—Mr. F. S. Barton, M.A., F.Inst.P., on "Air Photography Apparatus."

Dec. 9.—Capt. F. Entwistle on "Wind Structure in Relation to Air Navigation."

Jan. 13, 1927.—Prof. F. C. Lea on "Some Experiments on the Effects of Repeated Stresses on Materials."

Jan. 27.—Capt. F. C. Barnwell on "Some Notes on the Design of Aircrafts."

Feb. 10.—Mr. H. P. Folland, on a subject to be announced later.

Feb. 22.—Lt.-Col. L. F. R. Fell on "The Manufacture and Testing of Mechanical Units for Aircrafts."

Mar. 8.—Major H. N. Wyllie on "Portable Hangars."

Mar. 22.—Mr. W. V. Gilbert on "A New Type of Wing Construction."

Apr. 19.—Capt. F. Tymms on "Flying for Air Survey Photography."

May 10.—Mr. L. A. Wingfield on "Aircraft Law."

All meetings will be held at the Junior Institute of Engineers, 39, Victoria Street, S.W.1, at 6.30 p.m.

PERSONAL NOTICES.

DEATHS.

JONES.—On Sept. 21, at "Clovelly," Warlingham, Surrey, Saxon Hyde, third son of Sir Bertram and Lady Jones, in his 13th year.

JONES.—On Sept. 22, drowned in the River Indus, at Attock, India, as the result of a flying accident, A.C.I. Percy Jones, No. 5 (Army Co-operation) Sqdn., R.A.F.

LUXMOORE.—On Sept. 20, at Biggin Hill, Kent, as the result of a flying accident, Henry Frederick Luxmore, Flg. Off., No. 56 (Fighter) Squadron, R.A.F.

Mr. Luxmore entered the R.A.F. with a short-service commission in March, 1924, and was posted to No. 5 F.T.S., Sealand, for a course of flying instruction. In February, 1925, he was posted to No. 47 (Fighter) Squadron, Northolt. He was promoted to the rank of Flying Officer in October, 1925, and was transferred to No. 56 Squadron last July, for Air Pilotage Duties.

MARRIAGES.

BLUCKE—WILSON.—On Sept. 22, at Sanderstead Parish Church, by the father of the bridegroom, Robert Stewart Blucke, R.A.F., only son of the Rev. R. S. K. Blucke, M.A., H.C.F., and Mrs. Blucke, of Monxton Rectory, Andover, to Nancy, daughter of Frank Wilson, Esq., and granddaughter of the late James Wilson, Esq., of Sanderstead.

IRWIN—TEACHER.—On Sept. 23, at Holy Trinity Church, Fareham, Flt. Lt. Herbert Carmichael Irwin, A.F.C., R.A.F., second son of the late Thomas Francis Nesbit Irwin, Dublin, and Mrs. Irwin, Frön Deg, Rhos Neigr, Anglesey, to Olivia Marjory Macdonald, daughter of Dr. and Mrs. Charles C. Teacher, of Hollington, Fareham, Hants, and formerly of Craighend, North Berwick.

SCROGGS—POWELL.—On Sept. 22, at All Saints', Compton, Winchester, Flt. Lt. H. S. Scroggs, R.A.F., only son of Cdr. H. C. Scroggs, R.N. (retired), and Mrs. Scroggs, of Colden Common, Winchester, to Margaret Fray, only daughter of Mr. and Mrs. E. E. Powell, of Shawford, Winchester, late of Ceylon.

FORTHCOMING MARRIAGES.

BEAUMONT—RIPLEY.—The marriage arranged between Mr. Lionel C. Beaumont, R.A.F., and Miss Enid Corinne Ripley, will take place at All Souls' Church, Langham Place, at half-past two o'clock in the afternoon of Oct. 5.

BURTENSHAW—MACQUEEN.—The engagement is announced between Sub-Lieut. Jack Burtenshaw, R.N., son of Sq. Ldr. A. Burtenshaw, O.B.E., M.C., R.A.F., and Mrs. Burtenshaw, 3, Hayes Road, Bromley, Kent, and Margot, daughter of Engineer Captain B. D. MacQueen, R.N. (Retd.), and Mrs. MacQueen, Yarrow, Dousland, South Devon.

CAREY—WAKELEY.—A marriage has been arranged and will shortly take place between Flt. Lt. Denis H. Carey, R.A.F., only son of Capt. Walter Carey, C.B.E., R.N., and Mrs. Carey, of Melrose, Winchester, and Ferelyth, elder daughter of Mr. and Mrs. Seymour Wakeley, of Rainham, Kent.

LEEDS—SINGER.—A marriage has been arranged, and will shortly take place, between Sir Reginald Leeds, Bt. (late R.N. and R.A.F.), elder son of the late Mr. W. H. A. St. J. Leeds, I.C.S., and Mrs. J. H. McNeale, of The Red Roofs, Cheltenham, and Winnaretta, only daughter of Mr. Paris Singer, of rbis, Place des Vosges, Paris, and Mrs. Fraham Singer, of 1, Ovington Square, S.W.

TOPHAM—CHESSUM.—The engagement is announced between Flt. Lt. Richard S. Topham, R.A.F. Medical Service, the only son of the late Dr. A. S. Topham and Mrs. Topham, of Halifax, Yorkshire, and Miss Marjorie Chessum, eldest surviving daughter of Mr. and Mrs. Roland B. Chessum, of Enfield, Middlesex.

BURNS.

CLEMONSON.—On Sept. 21, at Grantham, to Eileen, wife of Flt. Lt. A. W. Clemonson, O.B.E., D.S.C., R.A.F.—a son.

WEBSTER.—On Sept. 24, at Ingleton, Woldingham, Surrey, to Dorothy (née Jonas), wife of Flt. Lt. E. J. Webster, D.F.C., R.A.F.—a daughter.

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SUPERMARINE

ENGLAND.

COMMERCIAL AERONAUTICS. The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 19; Tuesday, 15; Wednesday, 16; Thursday, 14; Friday, 16; Saturday, 17; Sunday, 6.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 53, passengers 403, freight 19 tons

AIR UNION:

Paris—London: Machines 33, passengers 99, freight 12 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 12, passengers 65, freight 3 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 0, passengers 0.

PRIVATE:

Machines 5, passengers 5.

Total number of trips by British Machines, 58, carrying 408 passengers. Foreign Machines, 45, carrying 164 passengers.

Comparative Figures:

Week ending Sept. 26:

Machines, 103; Passengers, 572; Crews, 136; Total personnel, 708.

Corresponding week, 1925:

Machines, 124; Passengers, 556; Crews, 163; Total personnel, 719

Corresponding week, 1924:

Machines, 110; Passengers, 481; Crews, 132; Total personnel, 613.

Corresponding week, 1923:

Machines, 106; Passengers, 350; Crews, 162; Total personnel, 512.

Corresponding week, 1922:

Machines, 106; Passengers, 321; Crews, 190; Total personnel, 511.

Corresponding week, 1921:

Machines, 92; Passengers, 208; Crews, 105; Total personnel, 313.

Corresponding week, 1920:

Machines, 108; Passengers 175; Crews, 132; Total personnel, 307.

Croydon Notes.

The epidemic of forced landings at Lympne by air liners to and from the Continent which was so prevalent from the 10th to the 18th Sept. has now ceased and engines of all types have resumed their customary reliability. The Light Aeroplane Competition seemed to have the same effect that the alleged German "Death Ray" used to have on French air liners a few years ago. Perhaps it was the aura of disqualification radiated by the Stewards which did it.

On Oct. 23 there is to be a miniature Pageant at Croydon for the benefit of the Dominion Premiers. It will be remembered that at a similar function held some two or three years ago THE AEROPLANE pointed out to the Air Ministry that a show of this nature would attract the public in large quantities and that with suitable enclosures a considerable sum of money would be made for the R.A.F. Memorial Fund. At the same time there would be a good advertisement for flying in particular.

At the time the Air Ministry dithered and dithered and finally on the day before the show put up a free enclosure with no conveniences of any kind and on the day of the show several thousands of people turned up to see the very fine show that was provided.

Let us hope that the Air Ministry will provide some sort of free or paying enclosure again this year or else the roads round the aerodrome will all be blocked with would-be spectators.

Imperial Airways Ltd. have a new pilot now flying for them. This is Mr. Warner. One understands that he is a New Zealander who flew during the War on the Eastern Fronts. He is one of the pilots who are to fly on the Cairo—Karachi service and he is accustomed himself to air line work on the Home routes.

Mr. R. H. MacIntosh, who must have put in 99.99 per cent. of the seven years of air line work on twin and triple-engined machines, has been flying the Vulcan during the past week. Although unaccustomed to single-engined machines, he performed on the Vulcan with a masterly hand and his takes-off and landings were worth watching.

As everyone probably knows by now the Anglo-American Company have got a very fine new spirit on the market, known as S.A.M. (Special Air Ministry), without reference to our revered Air Minister, or to the head of the Instone firm, or to Mr. Saunders of Cowes, or to Lord Waring, whose aircraft enterprises still remain in suspension, or to Lord Bearstead and his brother. It is also provided with a minute percentage of ethyl-fluid which gives it a pink tinge and stops detonation. So probably in the near future we shall see advertisements requesting us to use "Pratt's pale pink petrol for pinking power plants."

At the works of A.D.C. Aircraft Ltd. Mr. Frank Courtney has been testing a Nimbus-Martinsyde. On Saturday he took it to Manchester for the Lancashire Club's Display.—G. D.

THE ROYAL AERONAUTICAL SOCIETY.

The next session's programme of the Royal Aeronautical Society opens on Thursday, Oct. 7, when Col. The Master of Sempill, A.F.C., Chairman of the Society, will give the inaugural address on "Aero Engine Fuels of To-day and Tomorrow." This meeting opens at 8.30 p.m.

Other meetings during the first half of the new session will be:—

Thursday, Oct. 21: Magnesium and Some of its Alloys, by Mr. W. R. D. Jones, M.Sc., 6.30 p.m.

Thursday, Nov. 4: Hydrogen as an Auxiliary Fuel for a Solid Injection Engine, by Mr. G. F. Muck Low, 7 p.m.

(Joint meeting with Institution of Automobile Engineers.) Thursday, Nov. 18: Methods of Performance Testing and Analysis, by Mr. R. S. Capon, 6.30 p.m.

Thursday, Dec. 2: Alloy Steels for Aero Work, by Mr. P. B. Henshaw, 6.30 p.m.

Thursday, Dec. 16: The Training of Aircraft Apprentices, by Wing Cdr. C. D. Breeze, A.F.C., R.A.F., 6.30 p.m.

A BOULTON AND PAUL APPOINTMENT.

Sq. Ldr. C. A. Rea, A.F.C., whose transference to the Royal Air Force Reserve has just been gazetted, has joined Boulton and Paul Ltd., of Norwich, as their pilot.

Sq. Ldr. Rea joined the R.N.A.S. during the War, and was for a long time attached to the Armament Experimental Section at the Isle of Grain, where in conjunction with Sq. Ldr. Wells he was responsible for very important work in connection with gunnery and bombing developments. He was later among the seaplane test pilots at the Isle of Grain. In March, 1920, he was posted to the Marine Aircraft Experimental Establishment at Felixstowe.

Boulton and Paul Ltd. may be congratulated upon having acquired the services of one of the most experienced of test pilots in this country. Sq. Ldr. Rea's work has mainly been concerned with seaplane types, but by no means exclusively so, and there is no room for doubt as to the value of his knowledge and experience to any firm engaged in experimental aircraft construction.

MUTUAL ADVERTISING.

A detachment of the Cornwall Aviation Company which has been touring in Thanet during the last two months, concluded its visit by spending Saturday and Sunday, Sept. 25 and 26, at Margate.

During their stay in Thanet they have taken up approximately 1,500 passengers. Forty-two of these were given free flights in the Company's machines by *The Thanet Advertiser* and *Broadstairs Echo*, who evidently consider that a little capital spent in popularising flying among their readers is as good an advertisement for themselves as it is for aviation.

"THE TIMES" TRADE AND ENGINEERING SUPPLEMENT.

The *Times Trade and Engineering Supplement* published on Sept. 18 contains the first of a regular series of sections dealing with the Aircraft Industry which are to appear at monthly intervals. The front page of this number contains an excellent portrait of Mr. T. O. M. Sopwith, Chairman of the S.B.A.C., as one of the Men of the Moment.

In the Aircraft section is contained a well-informed leading article outlining the present position and attainments of the British Aircraft Industry, an account of the Avro Avian, an article describing the Savage-Bramson Anti-Stall gear,

"Daily Mail" Light Aeroplane Competition and Grosvenor Cup Race were both won on **K.L.G.** SPARKING PLUGS.

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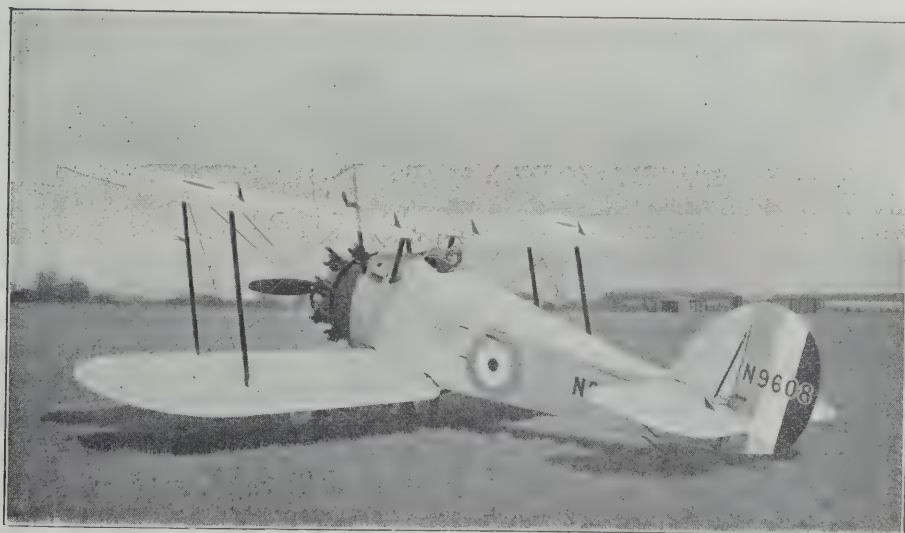
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an article concerning the value of Aerial Survey work, and a description of the Armstrong-Siddeley Genet.

As will be expected, the articles are well written, accurate in their facts, and rational in their expressions of opinion, and this new move by the Trade and Engineering Supplement should be valuable in drawing the attention of business men and engineers who do not read the aeronautical papers, to the achievements of British designers and constructors of aircraft.

CASTROL ENTERPRISE.

The rapidly increasing demand for Castrol from all parts of the world has necessitated the establishment of new

branches of C. C. Wakefield and Co., Ltd., at Toronto, Canada, and at Rio de Janeiro, Brazil.

These new branches are in addition to those already founded at Bombay, Karachi, Calcutta, Penang, New York, Johannesburg, Buenos Aires and Melbourne.

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A NAPIER MOVE.

Having disposed of the lease of the premises at 14, New Burlington Street, W.1, the Napier Company have now moved all their office work to the firm's head office and works at 211, Acton Vale, London, W.3.

MISCELLANEOUS ADVERTISEMENTS.

PATENTS.

STANLEY, POPPLEWELL AND CO., International Patent Agents, Jessel Chambers, 88, Chancery Lane, W.C.2. Telephone, Holborn 6393. Telegrams, "Notions, London." The Proprietor of British Patent No. 187617, relating to "Improvements in Wings for Aircraft," desires to enter into negotiations with one or more firms in Great Britain for the sale of the Patent rights, or for the grant of licences to manufacture under royalty.—Inquiries to be addressed to D. YOUNG AND CO., Chartered Patent Agents, 11 and 12, Southampton Buildings, London, W.C.2.

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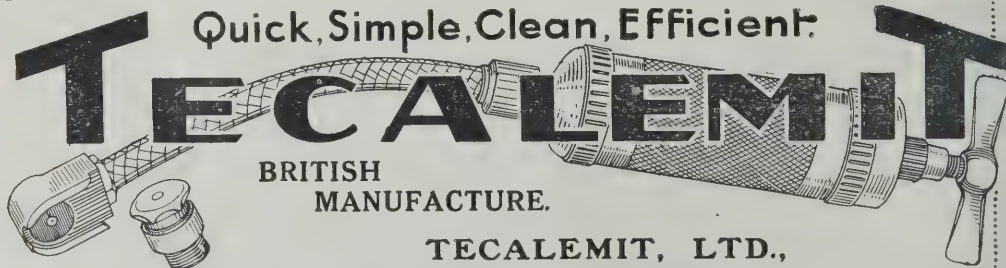
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THE AEROPLANE—OCT. 6, 1926.

International Aviators.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. G. G. G.

Vol. XXXI. No. 14.

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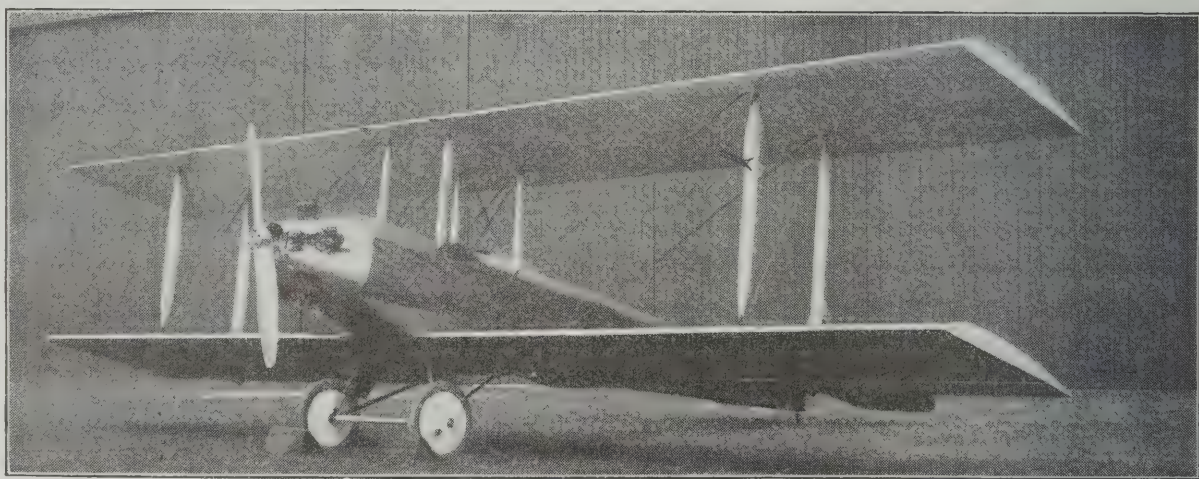
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ON INTERNATIONAL AVIATORS.

Having last week progressed from Parish Politics to Imperial ways of the air we may now go a step further and consider a matter of interest to International Aviation.

There are people in this world, of kindly altruistic natures, who believe that if all the nations of the World could be taught to know one another better, each would learn to appreciate the good qualities of the other, and so war would cease. This is a fascinating theory, and one which is very comforting to those who do not realise that, as men of great knowledge have shown over and over again, war is a biological necessity.

People who argue on those lines ignore the fact that man, as usual embracing woman, is a predatory animal, and will so remain so long as he grows his eyes in the front of his head. Some tribes are more peacefully disposed than others. But as a rule the more peaceful a people may be the more terrible they are in time of war. Other tribes are peaceful merely because they are too weak to fight. And in the main any nation, tribe or race of mankind is ready, for a first-class war at least once in a generation.

It is a fact that what we choose to call the civilised nations—which really means the nations which have the largest amount of property and have the most complicated systems of administration and have the most elaborate mechanical contrivances to minister to their personal comfort or convenience—are less likely to indulge their warlike feelings on slight provocation than are small portable tribes which have little prosperity to lose and little fixed property to destroy. But even the most elaborate and cultivated nations are so little civilised in fact that, given the right psychological momentum, they will go to war with enthusiasm—as was demonstrated in 1914.

One firmly believes that if one had a free hand and the command of the Press, and incidentally of a few broadcasting outfits, one could produce a first-class war between Liverpool and Manchester inside three months. One would only have to begin by talking about Manchester men and Liverpool gentlemen, and by making a few allusions to the atmosphere of Manchester and the quality of the Mersey (which is not strained), and one would probably have a frontier fracas, somewhere about Warrington, within a week—always provided that the Government of England did not interfere.

Where actual differences of breed occur, as for instance the

difference between the Nordic North of Ireland and Mediterranean-Dago South, the difficulty is not to make war but to prevent it. And the better the two peoples get to know one another the more they hate one another. Being so close geographically and so far apart racially, the North despises the South, and the South envies and hates the North.

That is why one has no belief whatever in the League of Nations, so long as it tries to embrace all the nations of the World in its absurd man-and-brother doctrines instead of making itself, as it should, into a League of the White Race against the coloured peoples.

There is quite sufficient difficulty in making a Nordic person tolerate a Mediterranean, though sufficient mutual acquaintance does at any rate induce in each an understanding of the other's peculiarities, and so induces a reasonable amount of liking. But no amount of intermingling can ever produce liking or even understanding between long-heads and square-heads—or, as one prefers to call them, the Semitic and Japhetic peoples—because they are racially antagonistic and think in entirely different ways.

Nevertheless, just for that very reason, there is every reason to wish for closer touch between the nations and for quicker communication and a more intimate intercourse among them. For thus those which are sympathetic will become the firmer friends and those which are antipathetic will become more definitely enemies. And so we shall the sooner and better know where we are. And there is no better way of getting such inter-communication than by the development of air transport.

THE INTERNATIONAL LEAGUE OF AVIATORS.

Therefore one is all in favour of the development of the International League of Aviators, which has recently been formed in Paris by Mr. Clifford B. Harmon.

With the development of air lines all over Europe, pilots of all nations find themselves continually landing at the air ports of other nations and already the effect has been to produce a friendly understanding among aviators. Only the other day one of our best known pilots remarked that, as the result of meeting foreign pilots here and abroad and talking to them on matters of common aeronautical interest, nothing would induce him in another war to go and shoot Germans, and that he might even find it hard to induce himself to shoot pilots of another (and Mediterranean) nation which he



THE INTERNATIONAL LEAGUE OF AVIATORS.—Personalities of the League in Brussels. Left to right, two assistants, Mr. Morgan (organiser of the tour), Mr. Clifford Harmon (president of the League), Colonel Baron Wahis (Chairman of the Belgian Post), Colonel Falchi (Chairman of the Italian Post), the Chevalier Willy Coppens (Belgian Air Attaché in London and Paris), Guido Mattioli (Editor of "Aviazione," Rome), the engineer Juliani and two supporters.

individually happens cordially to dislike. In fact, he said, if another war broke out he would apply for a job underground in Spitzbergen.

The International League of Aviators, known officially as the *Ligue Internationale des Aviateurs*, was formed in Paris some six months ago by Mr. Harmon, himself one of the pioneers of American aviation.

Most new ideas begin in France, but the French always have the curious quality of developing an idea up to a certain point and losing interest in it when they see that it works all right. That is why French motor-cars never have the meticulously beautiful finish of Italian cars nor the studiously mechanical accuracy of German cars nor the solid durability of English cars nor the hustled completeness of American cars. Nothing is more characteristic of the nation which produces it than is the finish and equipment of a motor-car.

Therefore if an International League of Aviators had been founded and run by Frenchmen it would have been doomed to failure. And this apart from the fact that at the moment the French themselves are not exactly internationally popular, either with those whom they helped to defeat in the War 1914-18 or with those to whom they owe money.

But, the League having been founded by an American, and established in Paris, which after all is the best possible centre for such an organisation, starts by having an international tone which is much to its advantage. Moreover the Secretary is M. Ladislav d'Orcy—more properly the Baron Ladislav Orczy, a member of the famous Hungarian family, who was brought up in Paris and lived for many years in America. Which again adds to the international character of the League.

MR. CLIFFORD HARMON.

Here seems to be the fitting place at which to say something about Mr. Harmon, seeing that his early connection with aviation is so long ago that the newest generation of aviators does not even know his name.

One first heard of Mr. Harmon about 1910, when flying was just developing in the United States. If one remembers rightly he owned one of the earliest Wright biplanes and flew it at the first flying meeting in America, which was held at San Diego, California. His Aviator's Certificate is number 6 on the American list.

One finds on reference to the old blue-covered *Aero* of July 12, 1910, that Mr. Harmon was President of the Council of the Aero Club of America at that time. And among other interesting information is the fact that on June 29, 1910, he made a flight of sixty-eight miles at Mineola, on a Farman biplane, which was the machine on which M. Louis Paulhan gave his demonstrations in the States. Also one finds that on July 3, 1910, Mr. Harmon flew a Curtiss biplane for 2 hours and 3 minutes, which at the time was the duration record for the United States.

As Mr. Harmon is now about sixty years of age, he must have been approximately forty-five years of age at that time. Which seems rather a good answer to the belief, still prevalent in this country even in these days of simple and safe aeroplanes, that a man is too old to learn to fly after 40.

At that time Mr. Harmon was what was called a real estate man, which is what we should call a land and estate agent, or in modern American a "realtor." Since then Mr. Harmon's affairs have prospered greatly, and, having no family of his own and being of a kindly disposition he has appointed himself a kind of god-father to all aviators, and is devoting himself and his wealth and his time to the furthering of a friendly understanding between pilots of all nations, to whom he refers conversationally, in a parental way, as "those boys."

Mr. Harmon's first benevolent action was to take at his own expense a lease of some very fine premises in the Clos

Normand, which is near the entrance to the Bois de Boulogne. The rooms there are very much finer than any premises devoted to aviation in this country or in America or elsewhere in France, and are only excelled by the magnificent premises of the Aero Club of Germany. The catering is done at low prices by an excellent restaurant which occupies the lower part of the building. And the place is a most comfortable home for aviators of all nations.

THE SCHEME OF THE LEAGUE.

The general scheme of the League is to have Branches, or, as Mr. Harmon calls them, Posts, in the capital of each nation. These Posts will each provide premises of some sort at which members of the League can congregate. In fact it amounts to a scheme for providing international clubs for aviators in all countries.

During the past few weeks Mr. Harmon has been making a tour of Western Europe to establish certain of these Posts. And in the course of his tour he arrived in England on Sept. 29, with the intention of forming a British Post of the League.

Contrary to all law, order and decency, instead of Mr. Harmon being received as the guest of honour of British aviators, he himself gave a lunch at the Savoy to some fifty people concerned with British aviation in order to introduce his beneficent proposal. And as a fitting accompaniment to this topsy-turvy proceeding, instead of the host having to wait for his guests to arrive, the guests duly assembled on time and had to wait half-an-hour for their host, owing to the very simple fact that he had trusted to air transport to get him there in time instead of coming by more conventional methods.

THE INTRODUCTORY LUNCH.

At the Lunch the Chair was taken by Lieut.-Col. Ivo A. E. Edwards, C.M.G., Deputy Director of Air Transport, in the absence of Sir Sefton Brancker, who was detained on official business.

Col. Edwards said that he had the unusual task of introducing our host to his own guests. He also introduced Col. Falchi, the Chairman of the Italian Post of the League, who is Colonel of a bombing regiment of the Italian Regia Aeronautica, and Col. Baron Wahis, the Chairman of the Belgian Post, who is a senior Officer of the Belgian Air Service.

Referring to our host, Col. Edwards said that, like most of his compatriots, Mr. Harmon was possessed of vision—(most of the guests thought he was going to say wealth). As to the development of Air Transport, he said that the tendency to-day was to form national companies, but that this could not be the final end, which must be the formation of international routes. And ultimately competition would arise along those routes.

Another aspect of development was that frontiers were being obliterated and that camaraderie among aviators was expanding. The result would be that commercial aviation would in some degree take the place of the League of Nations, and he thought that Mr. Harmon had some such idea in his mind in forming the League of Aviators.

Mr. Harmon said that a lunch had been suggested to him as the best way of meeting prominent men in British aviation. The organisation of the League was four months' old. They had got into their club rooms then and the membership had been growing ever since. He hoped that England would develop into the biggest of their Posts.

The qualification for the League was that every member must be a certificated aviator.

Describing his journey he said that Col. Falchi had borrowed from the Caproni Co. a bombing machine with which to visit the Posts. They had left Milan on September 20th with a crowd of some ten thousand people to see them off, and landed at Turin. Leaving there next day they had a very fine reception in Paris on the 21st. Thence they flew to Brussels on the 22nd.

In Brussels they were presented by Col. Wahis to the King of the Belgians, who had honoured them by becoming a patron and Honorary President of the League. His Majesty had expressed his interest in the purposes of the League and had said that they could



THE INTERNATIONAL LEAGUE OF AVIATORS.—The Caproni Bomber (two Isotta-Fraschini "Asso" engines in tandem), temporarily made into a passenger craft for a tour in the interests of the League. It flies well, but as a passenger-carrier it is not the last word. The passengers enter by the pilot's cockpit, who, when landing the machine telescoped its nose, the passengers would have to be excavated.

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A flight of Royal Air Force Vickers-Victoria machines fitted with Napier engines are now undertaking a flight from Cairo to Aden and back.

Major Franco, on a Dornier Wal flying boat fitted with two Napier engines, flew from Spain to Buenos Aires, covering 12,518 engine flying miles.

The First Prize in the German competition to discover the best commercial seaplane was won by the only Napier-engined machine entered—the HEINKEL NAPIER.

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not have a better Chairman of the English Post than Sir Sefton Brancker.

Thence they had gone to Amsterdam, where they were hospitably received by the Aero Club of Holland.

As to the aims of the League, Mr. Harmon said that it was intended to give aviators homes all over the World where they could walk in and hang up their hats and find comrades and friends. Fourteen countries had already signified their willingness to join in the scheme.

The French Post was run by *Les Vieilles Tiges* (the Old Stalks), an organisation composed entirely of pre-War aviators, with M. Léon Bathiat as its Chairman, and it offered already many practical advantages to its members. Sixteen doctors in Paris had already consented to attend members of the League free of charge. Special rates of discount had been arranged for members at various hotels, restaurants, theatres and stores in Paris.

At the club house in the Bois de Boulogne they were holding classes in various languages for the benefit of members. Also stenographers who could take letters in various languages were available, and members would have the use of all the conveniences of a well-equipped office.

He hoped that the Post of each country would appoint somebody who was resident in Paris to be its executive officer there, to attend the monthly Meetings of the League and to report the proceedings of the Meeting to the Post and to report the wishes of the Post to the Meetings.

Every member of the League would receive a passport book vouching for his identity to whichever foreign Post he might visit. Mr. Harmon pointed out jokingly that these passports had a very official appearance and had already proved to have considerable influence with police officers to whom they had been produced, as they looked so important.

Further Mr. Harmon said that it was the intention of the League to hold a great entertainment and ball at the Opera House in Paris in March. One-third of the profits would be presented to the member of the League who was adjudged to have put up the best performance of the year and two-thirds would be devoted to the benevolent purposes of the League.

In this connection he said that already the League had sent ten orphans of French aviators who had been killed on service to the United States to live in well-to-do homes where they would be properly educated. He hoped that the League would be rich enough to help other orphans of aviators in a similar way.

In the lunch room was a handsome symbolical bronze statue, and Mr. Harmon explained that a replica of this had been presented to each country in which a Post had been formed and that it was to be given to the particular aviator of that country who had put up the best performance of the year.

COL. FALCHI thanked Mr. Harmon and those present for the reception given to him and Col. Wahis. He said that he had met Mr. Harmon a year ago and had found him to be one of the best sportsmen of the United States. He appreciated very much the fact that Mr. Harmon had committed himself to his "poor wings" over the Alps instead of travelling, as he might have done, in a comfortable sleeping car.

As to the League, Colonel Falchi said that Americans when they have a sentiment have a need to turn it into action, and that this idea of an International League was much more practicable than it might seem at first appearance.

He himself was a regular officer, but he believed that aviation would bring the countries closer together. Air war would make offence greater than defence, so as a man of war he felt justified in taking part in this movement. People habitually combined to prevent illness instead of merely trying to cure it, so he hoped that this combination of aviators might help to prevent war.

He spoke of the cordial welcome they had received in France and in Belgium, and he said that as England was the head of human progress he hoped the League would be successful in this country.

ADMIRAL MARK KERR thanked Mr. Harmon, on behalf of the guests, for his hospitality. He believed that the League would make for a brotherhood of aviators. The spread of Aviation would improve understanding between nations. And perhaps this League might be a milestone on the road to peace.

A BRITISH BRANCH.

The guests assembled by Mr. Morgan, who had come over some days before on behalf of Mr. Harmon to organise the Lunch were truly representative of British aviation. They were practically all pilots, and they included representatives of the Air Ministry, of Imperial Airways Ltd., well-known test pilots belonging to different firms, and independent test pilots, and representatives of the Royal Aero Club.

As the result of talking to a great many of them there is no doubt that the idea of forming a British Post of the League meets with very general approval. Therefore the first thing to be done is to take some practical step towards forming the Post.

Obviously the right way to do it would be for some wealthy and patriotic individual, of Mr. Harmon's type, to take premises in London and engage a competent secretary-manager to run them. In this way the actual pilot-aviators would have their own little club quite as a distinct entity, where they could discuss their own problems free from all outside influences.

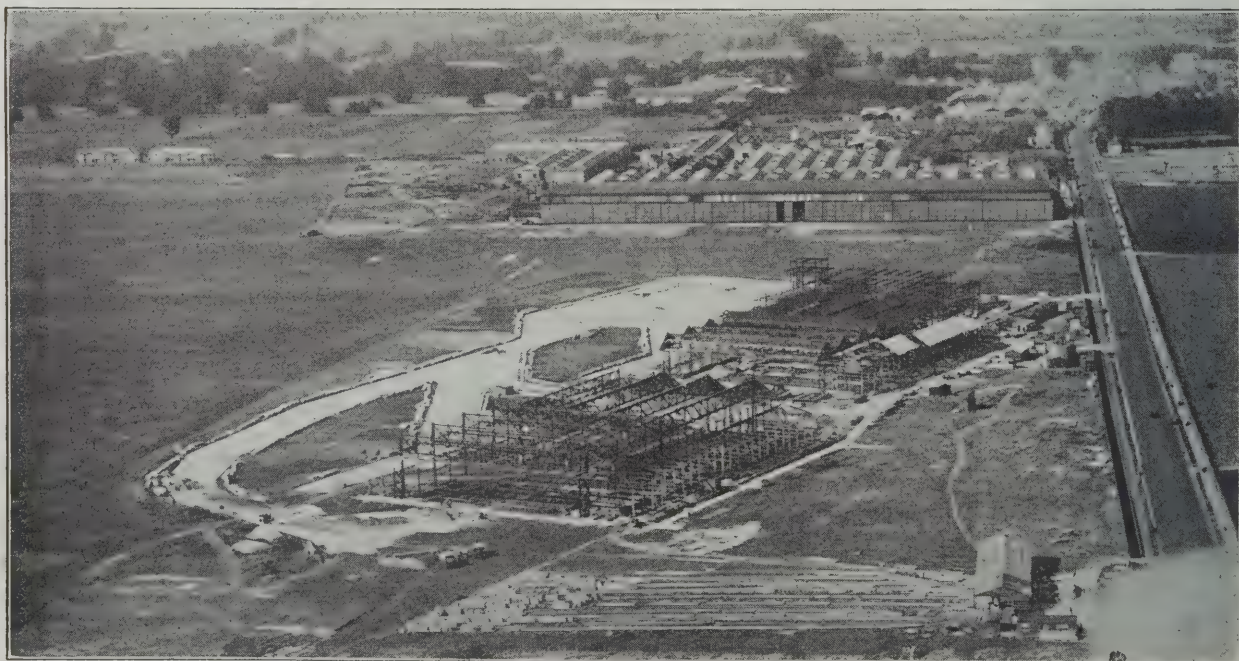
But one fears that no such individual does in fact exist in England to-day. The only person of whom one can think at the moment as being at the same time sufficiently wealthy and sufficiently interested in aviation to take such a responsibility has already been so generous in his benevolences that it would be almost indecent to ask him to do any more than he has done. But perhaps with the recent growth of interest in aviation there may be some other wealthy person who is willing to come forward as what the French used in the early days to call a "Mæcenas of Aviation."

Somebody or another suggested that the best scheme for the British Post would be for the Air Ministry to allocate two or three rooms in the new aerodrome hotel which is being built at Croydon in conjunction with the new airport buildings. This sounds a nice simple way of getting out of the difficulty.

But one would point out that when an aviator of any nation lands at Croydon the first thing he wants to do when his work is over is to get away from the aerodrome and into civilisation of some kind. Foreign aviators do not want to hang around the aerodrome, they want to get to London. And British aviators either want to go home or they, too, want to get to the civilised part of London.

A CHANCE FOR THE AERO CLUB.

Therefore the only workable proposition at the moment seems to be for the Royal Aero Club to constitute itself the British Post of the League.



THE AIR PORT OF CROYDON TO BE.—Some day International Aviators will have new problems to tackle in landing at Croydon. The present aerodrome buildings are to be demolished and new sheds, offices and a hotel are being built alongside the new Brighton Road, next door to the premises of A.D.C. Aircraft Ltd.—where they are precisely in the line along which machines alight into the prevailing wind. Here, photographed by the Surrey Flying Services, the new buildings are seen in process of obstruction.

FAIREY AVIATION COMPANY, LIMITED



HEAD OFFICES AND WORKS: HAYES, MIDDLESEX

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There are, of course, many objections to such a course, but there do not seem to be any difficulties about it. One objection is naturally that so far as British aviators are concerned it means bringing them within the pernicious influence of the Club, in relation to competition flying and so forth, when it would be so much more to the advantage of everybody concerned for the actual pilots to have premises of their own in which they would be in no wise beholden to a club which has failed so lamentably to promote the Sport of Flying, which is its primary reason for being.

As concerns foreign aviators, anybody who has any proper pride in the British Nation might well feel a certain sense of diffidence, if not actual shame, in bringing to the cramped and rather shabby little premises of the Royal Aero Club aviators who have been accustomed to the magnificence of the German Club and the spaciousness of the League's own premises in the Bois. But failing the provision of better premises, the Aero Club might do.

To adopt this method would be all for the benefit of the Aero Club, and could not present any particular difficulties. Under the existing state of affairs, any member of any Aero Club which belongs to the *Fédération Aéronautique Internationale* is entitled to temporary membership of the Royal Aero Club on presenting his card of membership in his own Club. Probably the majority of foreign pilots visiting this country are already members of their own national clubs, and have actually the right of using the Aero Club, if they need it, or if they care to do so.

Therefore it would only mean extending to the *Ligue Internationale* the courtesies already extended to the various other Aero Clubs. The only difference would be that members of the League would have a definite right to use the premises of the Aero Club, instead of feeling that they were guests there simply as an act of courtesy.

So far as the Aero Club itself is concerned, it would benefit very materially. The members of the League would spend

money there. And certainly the outlook of the members of the Royal Aero Club would be vastly expanded by continually meeting aviators of all nations who come to this country. These distinguished foreign visitors might even have an educative and elevating effect on members of the Committee of the Royal Aero Club, if only Committeemen could be induced to visit the Club occasionally and talk Aviation instead of motoring.

Therefore on the whole one thinks that this would probably be the best method of working the English Post.

There is, however, one very important point in this connection. The British Post of the League should not be in any way subject to the governance of the Committee of the Aero Club, except in so far as the members of the League would have to conform to the ordinary rules of the Club. The Committee of the Club would always have the right to exclude from the Club any member of the League who might behave in an objectionable manner.

Perhaps Mr. Stevenson, the able and amiable Assistant Secretary of the Aero Club, might take on his already hard-worked shoulders the task of looking after correspondence as between the British Post and the Headquarters of the League in Paris. And one feels sure that Mr. Perrin would keep a benevolent eye on all the foreign visitors.

Apart from that the British Post would have to be regarded as absolutely distinct from the Aero Club and would have the absolute right to remove itself to other premises if its membership grew to such an extent as to permit such an expenditure, or if some kindly patron of aviation endowed it with premises of its own. It would have to be careful to keep off its Committee all Modocks and lime-lighters, for in any new organisation, especially one of such international importance, there is always the danger of someone thrusting himself (or herself) onto the Committee who is more concerned with self-advertisement than with the actual welfare and progress of Aviation. The ultimate success of the Post must depend on who runs it.

In any case one hopes that the British Post of the League will come into being and that it will prove to be not only a home from home for foreign aviators in this country but will also help materially in promoting good feeling between the nations whose pilots benefit by its existence.—C. G. G.



IMPERIAL INTEREST.—His Imperial Highness the German Crown Prince talking to Senor Don Juan de la Cierva (on right) and Mr. Frank Courtney, during the Flying Meeting at the Tempelhofer Feld at Berlin, at which Mr. Courtney demonstrated the Autogiro.

His Highness had a long talk with Mr. Courtney on Aviation in general and expressed his keen interest in Civil Aviation. He said that though a war, for which nobody in particular was responsible, had failed to bring the European nations under one flag, he believed that the spread of Civil Aviation and the way in which it would bring the peoples and the capitals of great nations close together, would make for better international understanding and would so go far towards preventing war and prolonging peace. Thus one finds the Crown Prince and Mr. Clifford Harmon united in principles if not in politics.

AIR SURVEY EXPANSION AND MAIL WORK.

The Air Survey Company has, on the conclusion of its aerial survey work in Borneo for the Sarawak Government and the Miri Oilfields obtained a further contract for work in the Malay Peninsula. This contract, made with the Government of the Federated Malay States, is for an aerial survey of the west coastline between Port Swettenham and Port Weld, a stretch of coast which includes valuable mangrove forest areas.

It is the first work of its kind to be undertaken under the auspices of the F.M.S. Government, although H.M. Seaplane-carrier *Pegasus* did an extensive survey for the Admiralty during four months of 1924.

The survey will be done by Mr. J. Durward (late R.A.F.) with Mr. Vincent as pilot, and the seaplanes to be used will be based at Port Swettenham.

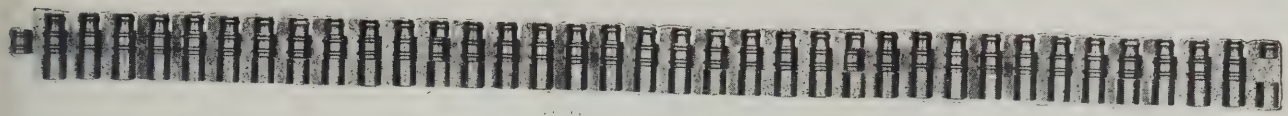
Mr. R. C. Kemp, the Managing Director of the Air Survey Company, is at present in England making arrangements for a future survey, and the expansion of the company. Mr. F. P. Raynham, who has been in charge of the Borneo surveys, is returning to England on leave.

Since the Air Survey Company came into existence it has surveyed by means of air photography and air reconnaissance over 20,000 square miles of territory in India, Burma, and Borneo, which included a photographic mapping survey of the Irrawaddy Delta, and 1,400 square miles of forest reserves for the Burma Government, surveys for the Burma Oil Company, the Rajah of Sarawak, and the Miri Oilfields in Borneo.

On Aug. 23 the Air Survey Company ran an experimental air mail service between Singapore and Port Swettenham, Selangor, F.M.S.

The machine, which was flying from Borneo to Port Swettenham in connection with the new survey contract mentioned above, picked up two bags of mail despatched by the Straits Post Office at Singapore to Kuala Lumpur and Port Swettenham. The seaplane, piloted by Mr. Vincent and carrying Mr. Durward as passenger, left the Lagoon Dock, Singapore, at 09.08 hours and arrived at Port Swettenham at 11.45 hours.

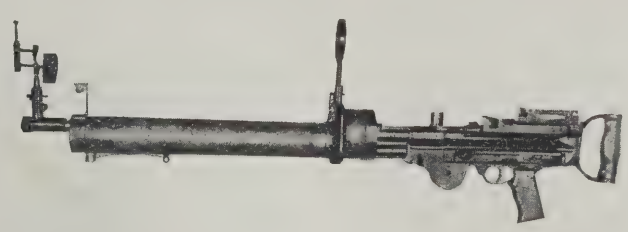
Mail posted in Singapore at 08.00 hours was received in Kuala Lumpur at 14.30 hours and delivered the same afternoon. The Straits postal authorities are watching this experiment with interest and it is hoped that this flight will soon be followed by the inauguration of a regular service from Penang to Singapore and from Singapore to Java.



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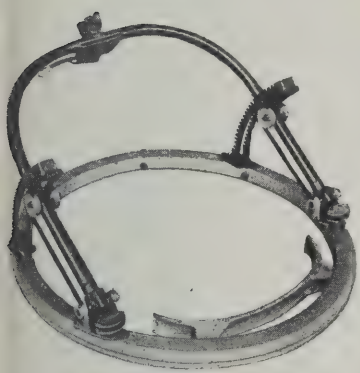
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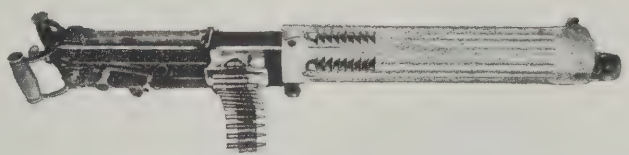


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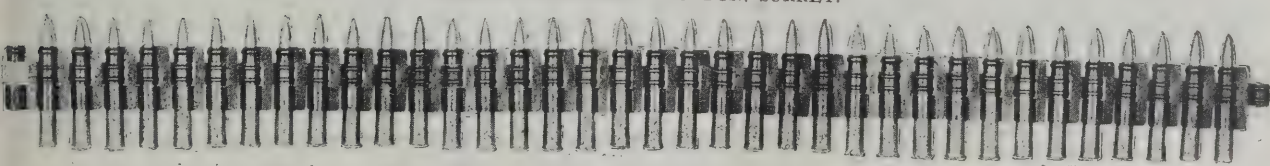
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE SIR CHARLES WAKEFIELD FLIGHT.

[Since the following article was written, the Secretary of State for Air, Sir Samuel Hoare, Bart., has announced that His Majesty the King has been pleased to confer the honour of Knighthood of the British Empire on the pilot of the flight to Australia and back. Thus Sir Alan Cobham, as a K.B.E., takes precedence of Sir Henry White-Smith and Sir Frank McClean, who are Knights Bachelors, and ranks with but after Sir Keith Smith and Sir Arthur Whitten Brown, the only other civilians who have been knighted for their services to Aviation.—C. G. G.]

On Oct. 1 the De Havilland 50J, with Armstrong-Siddeley Jaguar engine, which flew to Australia and back, alighted on the Thames at Westminster with Messrs. Cobham, Ward and Capel on board. So great was the press of people to witness the arrival that the task of describing the event has been committed to THE AEROPLANE'S Rugby Football specialist, who is more accustomed to such scimmages than is the present writer. One proposes therefore to confine one's own remarks to a consideration of the flight as a triumph of British aeronautical engineering, and its relation to aeronautical progress. The various receptions, speeches, lunches, dinners, parties, and so forth, inflicted on Mr. Cobham have been or will be fully reported in the non-technical papers; and anything more than a record of their occurrence would be out of place in a paper devoted to flying and not to talking.

In their enthusiasm the non-technical newspapers of this country seem to have forgotten that great World flights have been made before this journey to Australia and back. Consequently many erroneous statements have been made and much misleading information has appeared during the past week.

The first flight to Australia was made between Nov. 12, 1919, and Dec. 10, 1919, by the brothers Ross and Keith Smith, with Sjts. Bennett and Shiers as engineers, in a Vickers Vimy biplane with two Rolls-Royce Eagle engines. So this recent flight is not a pioneer undertaking as the newspapers would have their readers believe. Nor is it the fastest flight between England and Australia, for the Smith Brothers actually took a shorter time on their journey to Australia than Mr. Cobham took on his return. Nor is it the longest flight from Europe to Far Eastern waters and back, for the total distance of this flight is 28,000 miles, whereas the Marchese de Pinedo covered 33,000 miles last year between Apr. 21 and Nov. 7.

AN ALL-BRITISH TRIUMPH.

It is just as well to get important events into something like their proper proportion and perspective. Where the flight to Australia and back stands out above all other long-distance flights is in the demonstration which it has given of the soundness and reliability of British aeronautical en-

gineering. In practically all the other flights of World-wide interest it has been the pilot and his engineer or engineers who have made the flight while engines and sometimes whole aeroplanes have been changed.

Of course, in such a flight as that of the late Sir John Alcock across the Atlantic on the Vickers Vimy with Rolls-Royce engines, which is still the most heroic flight in history, no change was made. And the non-stop long-distance records put up by French aviators on aeroplanes which are practically vast petrol tanks with wings stuck onto them, are also done without a change. But in that magnificent flight round the World by four American Army aviators engines and floats were changed over and over again. And even the Marchese de Pinedo changed his engine in Japan.

The outstanding fact about this Australian flight is that the same material which left England returned to it intact. And all concerned in the performance have good reason to be proud of themselves, for they have all helped to demonstrate to the World the reliability of British aircraft material and workmanship.

THE PATRON OF THE PERFORMANCE.

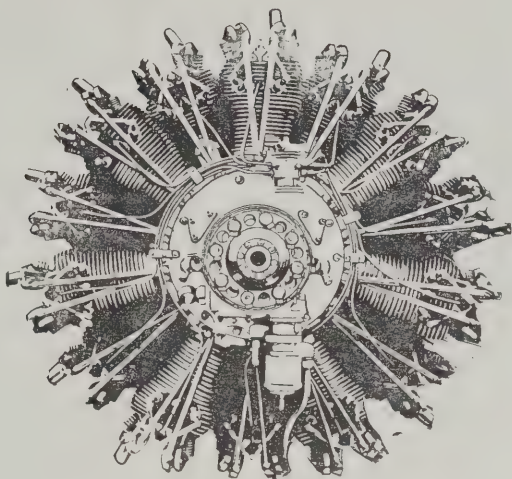
Primarily the thanks of all those who have thus profited by the flight are due to Sir Charles Wakefield. And one was glad to see that Mr. Cobham chose to call the flight officially "The Sir Charles Wakefield Flight."

The reason was that when Mr. Cobham set out to organise the affair he found considerable difficulty in getting the necessary financial support for actual running expenses. Machine, engine, petrol, oil, and accessories, were all forthcoming, but actual money for out-of-pocket expenses was lacking. Consequently, like the Royal Aero Club and everybody else in Aviation who wants money for praiseworthy enterprise, Mr. Cobham went to Sir Charles Wakefield, "that ever open door of aviation" as somebody has called him, and the needed money was at once produced.

One has on several occasions endeavoured to express the indebtedness of British Aviation to Sir Charles. His generosity in giving prize-money to the Royal Aero Club when the numerous exalted personages and millionaires among its patrons have failed to find the necessary finance, his gift of an aeroplane to the Lancashire Aero Club, his financial help in Mr. Cobham's previous flights, and all that he has done from the very earliest days of aviation when he was the first among oil manufacturers to produce a special oil for aero-engines, really entitle him to be recognised as the Fairy Godfather of British Aviation. Therefore it is only right and proper that this splendid demonstration of what British aeronautical engineering can do should have been accomplished under the aegis of Sir Charles Wakefield.



THE END OF THE JOURNEY.—The D.H.50J (Armstrong-Siddeley Jaguar engine) alighting in front of the Houses of Parliament.



England - Australia - England
28,000 Miles.

The

ARMSTRONG SIDDELEY JAGUAR

AIR COOLED ENGINE

flown by

Alan Cobham

on his De Havilland 50 Aeroplane

has now completed

44,000 Miles of Trouble-free Running.

The same Jaguar Engine was used in Alan Cobham's flight London to Cape Town and back.

The Armstrong Siddeley Range of Air-cooled Engines:—

"Jaguar" 14-Cylinder 385 h.p.; "Lynx" 7 Cylinder 180 h.p.; "Mongoose" 5 Cylinder 125 h.p.; "Genet" 5 Cylinder 65 h.p.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE EXCELLENT AIRCRAFT.

Naturally the centre of interest is the De Havilland 50J itself. Personally one regards the D.H.50 with the old Siddeley Puma engine as the ideal single-engined aeroplane for touring, as distinct from the many-passengered air liner. And this particular D.H.50 has a truly remarkable record.

With the Siddeley Puma it conveyed Sir Sefton Brancker from London to Rangoon and back in 1924 piloted by Mr. Cobham with the late Mr. Elliott as engineer. After that voyage it had an accident at the De Havilland aerodrome at Stag Lane in the hands of another pilot and though it was rather badly damaged it was rebuilt and most of the original material still remained in it. When it was rebuilt it was fitted with one of the first Armstrong-Siddeley Jaguar engines and in it Mr. Cobham and Mr. Elliott flew to the Cape and back in 1925-26.

For the Australian journey no alterations whatever were made in the machine itself after the Cape flight. The Jaguar engine, embodying improvements as the result of experiences during Cape flight, was again fitted. Also it was fitted with a pair of duralumin floats built by Short Brothers of Rochester, the pioneers of British seaplanes. And that combination went all the way to Australia and back.

At Port Darwin the floats were changed for wheels for the journey to Melbourne and back to Port Darwin.

ALL-BRITISH MATERIALS.

Being essentially a wooden machine, as distinguished from the all-metal type, one is justified in mentioning first of all that the timber in the machine was supplied by Mallinson and Sons Ltd., who were, one believes, the first timber dealers to specialise in aircraft material.

As in all De Havilland machines, the wooden framework is largely held together by plywood panels. And this material was supplied by the Aeronautical and Panel Plywood Co. Ltd., which is allied to the Mallinson firm.

Those who have doubts about wooden construction will do well to note that the same plywood and timber did the whole of the flight to the Cape and back and to Australia and back, through all sorts of variations of temperature and humidity. And most of this material in the machine has also been to Burma and back, though some of it had to be replaced after the accident before-mentioned.

The steel tubing in the machine was naturally supplied by Accles and Pollock, who, like so many of the other people concerned with the material in the machine, were the first in their line of business to specialise in aircraft material. In fact any aircraft manufacturer of to-day when he thinks of steel tubing automatically thinks of Accles and Pollock.

The various steel fittings in the machine, such as eye-bolts, turnbuckles and so forth, known in the Trade as "A.G.S. Parts," came from Rubery and Owen, who were certainly the first of the firms which specialise in the manipulation of sheet steel and steel forgings and so forth to specialise on aircraft work.

The bar steel for other parts of the machine was supplied by Jonas and Colver, a firm which, if not the very first, was certainly one of the first to produce special aircraft steels, thanks to the foresight of the late Sir Joseph Jonas.

The fabric in the machine was treated with Titanine

dope. The same was used in the Cape flight and it was not re-doped. As is usual with machines treated with Titanine, the fabric arrived back in exactly the same state of tautness and with practically the same brilliance of aspect as when it started. Which of course is only what anyone would expect who has had experience of Titanine since it was first introduced as a kind of by-product of the great firm of Holzapfel of Newcastle, which for so many years supplied the British Navy with the bulk of its paint and non-corrosive coatings for warships.

The various working parts of the machine were lubricated through Tecalemit greasers, which are at any rate related to the very earliest days of aviation seeing that the business is run by Mr. R. A. Chalmers, who built aero-engines in the year 1908, and has been a specialist on lubrication ever since.

The upholstering of the machine was done with Pegamoid, the product of another pioneer firm in aviation, for one can find Pegamoid advertised as a covering for aircraft in old aviation papers of 1909 and thereabouts.

For the journey overland across Australia of course Palmer tyres were used. Once more a pioneer firm is here concerned with the flight. The Palmer people were the first of tyre manufacturers to give special attention to the curious stresses to which aeroplane tyres are subjected.

They produced quite early in the War 1914-18 a special type of tyre, rim and wheel, extraordinarily light and amazingly strong, to take up the severe shock-loading to which aeroplane wheels are subjected. And it was not till the Palmer people produced these special wheels and tyres that pilots could take such liberties as they do now in cross-wind starts and landings without the danger of pulling their tyres off the rims or buckling their wheels.

The machine started with a wooden airscrew and finished with it. But one is told that a Fairey-Reed screw was used on the part of the journey from Port Darwin to Melbourne and back, because the Fairey screw was specially designed and made at the works of the Fairey Aviation Company to suit the speed and power of the machine when fitted with wheels, and there was no time in which to get another one made and tested to suit the machine when flying with floats.

The fact that the duralumin screw did all the Australian part of the journey and went through the worst of hot weather after reaching Australia should be sufficiently convincing to those who doubt the reliability of this type of screw.

The great firm of Vickers Ltd., who, as already mentioned, were responsible for the first flight to Australia and the only non-stop flight across the Atlantic, supplied all the duralumin used in the machine and its floats. Vickers Ltd. also supplied the streamline wires and swaged tie-rods.

THE SEA-GOING BASE.

The floats used for the journey from England to Australia and back deserve special notice. As already mentioned, they were built by Short Brothers of Rochester.

The Short Brothers began making seaplanes with floats in 1912, and have held their place in the front rank of seaplane manufacturers ever since. The original Short machines had short flat-bottomed pontoon floats with a small float



COMING IN.—The D.H.50J (Jaguar engine) gliding over Westminster bridge, with St. Thomas' Hospital in the background. The pleasing lines of the Short duralumin floats are noticeable.

125,000 MILES.

THE actual D.H. Type 50 Seaplane on which Mr. Alan J. Cobham has just completed his wonderful flight of 28,000 miles to AUSTRALIA AND BACK has now covered 125,000 miles, including the journeys to Rangoon and back and Cape Town and back.

THE
DE HAVILLAND AIRCRAFT CO., LTD.,
STAG LANE AERODROME, EDGWARE,
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Telegrams:—Havilland, Edgware.
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under the tail of the machine on which the weight rested when on the water. The long series of experiments made by Mr. Oswald Short during the years since the end of the War, in the special experimental tank which he installed at great expense at Rochester shortly after the War, has resulted in the production not only of flying-boat hulls of novel and valuable types but also in seaplane floats, of which those used on the D.H.50 are the latest example.

As the photographs of the machine show, they are of the long streamline type with a turtle back which has proved so successful on racing machines. If one recollects rightly the first successful floats of this particular type were made by Mr. Howard T. Wright just before the War, when he was in charge of the aircraft works of J. S. White and Co. of Cowes. One pointed out the advantages of the type in THE AEROPLANE at that time.

These Short floats on the D.H.50 have now proved not only the reliability of duralumin for floats but have also proved the soundness of Short Brothers' design and construction.

When Mr. Cobham took over the machine at the Short Works at Rochester a few days before starting for Australia he had never flown a seaplane. Naturally, being so skilled a pilot as he is, he did not take long to learn the trick of getting a seaplane off the water and onto it again, but he had to do a certain amount of practice before he acquired the knack.

Thereafter these same floats stood the buffeting of getting off heavy seas and of alighting on flat calm water without showing the slightest sign of strain or inconvenience of any kind. Their success is evidence that the Short firm has lost none of its old ability in the construction of sea-going aircraft.

THE POWER PLANT.

Comparisons are ever odious, so one will not attempt to compare the arduousness of the duties of the aeroplane and its floats with those of the power plant which pulled them off the water and through the air. It is enough to say that the power plant was worthy of the aircraft.

The Armstrong-Siddeley Jaguar engine which went to Melbourne and back has proved itself worthy of the highest traditions of British engineering in all its branches. Throughout the whole journey of 28,000 miles no part of the engine gave any trouble.

The engine was overhauled in Melbourne by Mr. Capel, one of the most experienced engineers in the employ of the Armstrong-Siddeley Company, with the assistance of Serjeant Ward, R.A.F., who had flown in the machine from Basra as substitute for the late Mr. Elliott. So far as one has been able to discover no part of the engine was replaced, and after a proper cleaning, which they deserved, all the original parts were put back again for the return journey. The result is the best possible testimony to the soundness of the detail design of the engine and of the high quality of the workmanship put into it.

The loads on the bearings of these very light high-powered engines are of a nature which would have shocked the most skilled designers of steam engines or internal combustion engines a few years ago. And the fact that such a journey as this could be made without trouble is proof that the metal used in the bearings is fully adequate to do its work. The bearing metal used in the Jaguar is that made by the Hoyt Metal Company.

Here again is an example of a pioneer firm still maintaining its pre-eminence. The Hoyt people started making special metals for petrol motors somewhere in the dark ages of motoring, and it was natural that designers of aero-engines should go to the firm for their material. All the wonderful durability records put up by the first all-British aero-engines, those made by the Green Engine Co. in the earliest days of flying, were made thanks to Hoyt metal bearing. And to-day Hoyt metal is still used as a matter of course in our latest aero-engines.

All other parts of the machine and engine being given due credit for what they have done, the fact still remains that if there had been any defect in the Hoyt metal of the bearings the voyage could not have been finished. So to the Hoyt firm belongs a large portion of the credit for this success.

Credit must also be given to the Anti-Attrition Metal Co. Ltd., for the phosphor bronze which is used in certain parts of the Jaguar engine.

Though for the purposes of the recent Light Aeroplane Competition at Lympne magnetos were not considered as an integral part of the engine and could be replaced as often as might be thought advisable, the magneto is at any rate an essential part of the power plant. And, in the Siddeley Jaguar, B.T.H. magnetos, made by the British Thomson-Houston Co. Ltd., are used. So far as one can learn, the B.T.H. magnetos which started from England made the voyage to Melbourne and back without trouble and without change. Magnetos are particularly apt to suffer from extremes of temperature and humidity, and it is therefore the

more to the credit of the B.T.H. that they went through this gruelling journey without trouble.

These particular magnetos were in fact the identical pair which had already made the flight to the Cape and back.

It is almost unnecessary to say that K.L.G. plugs were used. Ever since Mr. Kenelm Lee-Guinness started experimenting with plugs for racing cars the name K.L.G. has become more and more prominent. The constant full-power running of an aero-engine and the curious circumstances under which it has to operate, are a severe test of plugs. And the fact that the K.L.G. plug, in one or other of its many types is almost the only make used for all our aero-engines to-day proves definitely that the K.L.G. plug stands alone as the most reliable for aero-engines.

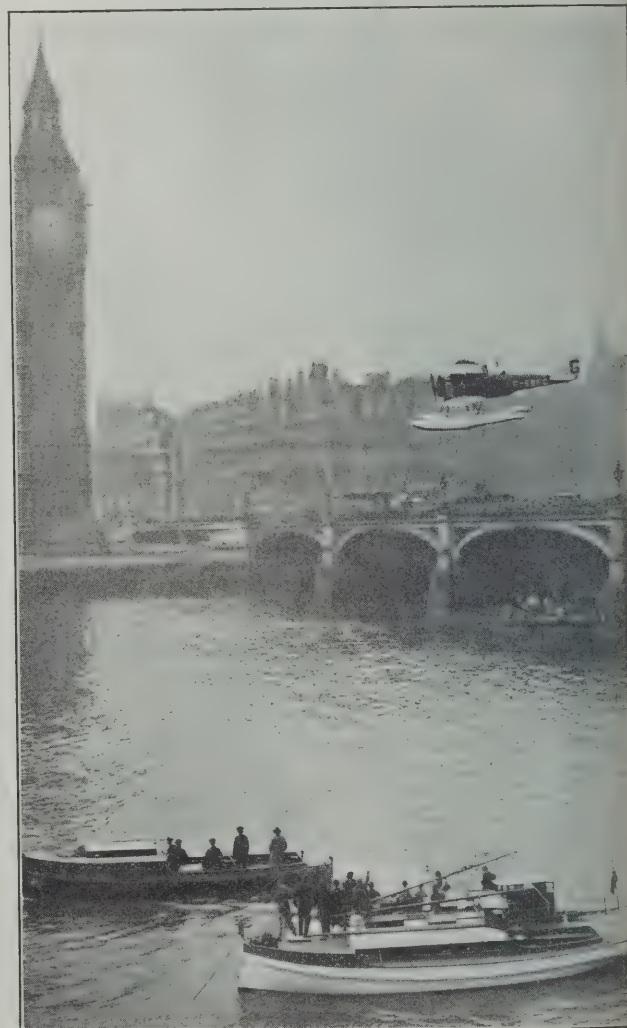
INSTRUMENTS.

Mr. Cobham is a very experienced aviator and consequently probably depends less on purely mechanical aid to his progress than does almost any other pilot, but certain things in the way of instruments are necessary even to him. Consequently the D.H.50 was fully equipped with the various indicating and navigating instruments made by S. Smith and Sons Ltd.

Smiths' instruments are practically standard fittings on all Service and civilian aircraft in these days. Nothing can be more dangerous than an unreliable instrument which may give the pilot an entirely false sense of security. Low-reading rev. indicators and high-reading air-speed indicators probably account for quite a number of deaths among aviators. But the aviator who uses Smiths' instruments and takes the trouble to keep them in order and to have them checked occasionally against properly calibrated instruments can at any rate assure so far as is humanly possible his safety against that particular kind of accident.

The Smith firm give special attention to calibration of instruments for all climates. In the works are hot and cold testing rooms which are themselves works of art. And the firm claims to be the only makers of such instruments in bulk who make such searching tests.

Some idea of what the instruments have to do may be gained from the calculation that the rev. indicator on the



SIDE-SLIPPING.—The D.H.50J (Jaguar) side-slipping down after crossing the bridge.

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THE GLOUCESTERSHIRE AIRCRAFT Co., Ltd.

AT
SUNNINGEND WORKS BROCKWORTH WORKS AND
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LONDON OFFICE: 49 RATHBONE PLACE, OXFORD STREET, W.



GLOSTER GAMECOCK WITH JUPITER ENGINE,
the standard Single Seater Fighter of the Royal Air Force.

[*"Flight"* Photo.]

CONTRACTORS TO
THE BRITISH AIR MINISTRY
&
FOREIGN GOVERNMENTS.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Jaguar made 40,000,000 (forty million) turns in its voyage to Australia and back. Truly these are astronomical figures.

Altogether the power plant with its accessories has proved that it is second to none among those which have created aerial records in the past.

OUTSIDE AIDS.

Apart from the machine and its floats and its power plant the success of a flight of this kind depends on two other material factors. One is the fuel used, and the other is the lubricating oil. The best of oil cannot do its work if asked to co-operate with inferior fuel, and the best of fuel cannot give the engine the desired power unless the engine is properly lubricated.

In this instance the lubricating oil was Wakefield Castrol. The Wakefield firm arranged all the necessary dumps along the route so that wherever Mr. Cobham alighted he would have the oil which his soul loveth—or at any rate he ought to love it after all that Sir Charles Wakefield has done and after all his experience of the lubricating qualities of Castrol. As is its custom the Wakefield Castrol did its duty without hitch or hindrance and so eased the way for Mr. Cobham.

The credit for the excellence of the fuel used has to be divided between three great oil firms. The British Petroleum Company, which is Anglo-Persian oil, arranged for petrol supplies for the Jaguar from London to Karachi. This time there was no hitch in the proceedings and apparently the proper proportion of benzol was duly delivered.

From Karachi to Siam the supply of petrol was undertaken by the Burma Oil Company.

From Siam to Melbourne and back the supply was assured by the British Imperial Oil Company, which is in alliance with the Shell and Royal Dutch groups.

Anyhow, B.P. and Shell between them seem to share the honour of providing the gas which supported Mr. Cobham and his fortunes.

Altogether it was a very great performance. As those readers who have taken the trouble to read the foregoing notes will have noticed, the machine was completely British and all of the material in the aeroplane and the engine was supplied by firms or individuals who were pioneers of aviation in its earliest days. It is a splendid example of virtue reaping its reward, in that all those individuals who were responsible for persuading reluctant partners or directors to come into the despised aeroplane movement in its earliest days must see in this example of durability and reliability the fulfilment of their beliefs and prophecies.—C. G. G.

MR. COBHAM'S ARRIVAL.

At the kind invitation of the Lord Great Chamberlain one proceeded to the Terrace of the Palace of Westminster on the occasion of the arrival of Mr. Alan J. Cobham, A.F.C., on completion of his return flight from Australia on Oct. 1.

Mr. Cobham [With Mr. Capel and Sgt. Ward, R.A.F., *bien entendu*.—ED.] arrived at 14.27 hrs. over the County Hall and flew straight up the river to Hammersmith. As it seemed rather a long time before his return, G.D., who is Morris-minded, suggested that he had forgotten the gyratory traffic system at Hammersmith and was having an argument with the police.

However, he reappeared as the sun was breaking through the clouds in accordance with the best Royal wedding tradi-

tions. A motor-boat belonging to Shorts of Rochester promptly had an attack of hysterics or hydrophobia [Or would it be aerophobia?—ED.] and rushed out into the tide-way barking. Mr. Cobham evidently did not like the look of it, and did another circuit over the crowd to the huge delight of the said crowd.

Incidentally the police did not carry out their threat of preventing people from loitering on Westminster Bridge to see "London's Own Airman" (*vide Press*). Perhaps their hearts relented at the last moment, or perhaps the great Traffic King decided that the Bridge had better break down and have done with all arguments about it. For he could send the bill in to Mr. Cobham anyhow.

An interesting exhibit during the half-hour of waiting was the parade in the river of the suicide-snatcher boats of the River Police. Not the essence of tact perhaps but very interesting.

It is quite possible that this Department was taking a professional interest in the vast crowd assembled on the decks of s.s. *Viscountess*. This noble but somewhat antiquated craft was showing a decided list to port, but even Mr. Cobham's arrival and the subsequent further lurch did not upset her river-worthiness. A certain amount of money seemed to change hands on the Terrace on account of the possibilities of the behaviour of the *Viscountess*.

Mr. Cobham made a very nice "alighting" in what seemed to be rather restricted space, and after handing the machine over for exhibition in somebody's bargain basement or roof-garden, the crew—Mr. Cobham, Sgt. Ward, R.A.F., and Mr. Capel—were transported to the Speaker's steps for their official welcome by the Secretary of State for Air.—C. M. MCA.

WORDS OF WELCOME.

Sir Samuel Hoare opened the proceedings by handing the following message from His Majesty the King to Mr. Cobham :—

On your safe return from Australia I offer you a cordial welcome home and congratulate you heartily on the successful termination of yet another historical flight.—GEORGE, R.I.

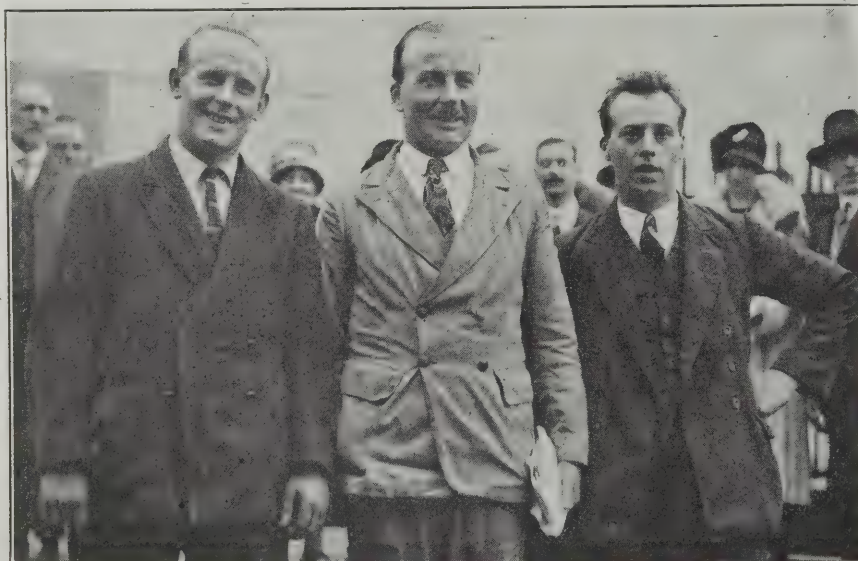
In a short speech Sir Samuel Hoare welcomed Mr. Cobham, Sgt. Ward, and Mr. Capel, on behalf of the British people. He pointed out that this was the first occasion on which one of the great pilot pioneers of the Empire had been received at the Palace of Westminster. Sir Samuel Hoare referred sympathetically to the untimely death of Mr. Elliott and said that he was glad that a substitute had been found in the ranks of the R.A.F.

After praising the D.H.50 and the Armstrong-Siddeley engine and the Short floats, Sir Samuel Hoare said he would like to add a word of thanks to Sir Charles Wakefield who had given so much support to British flying.

The Mayor of Westminster then added a few words of welcome. And Sir Charles Wakefield made one of his customary hearty speeches of welcome.

According to *The Times*, Mr. Cobham in acknowledgment said :—

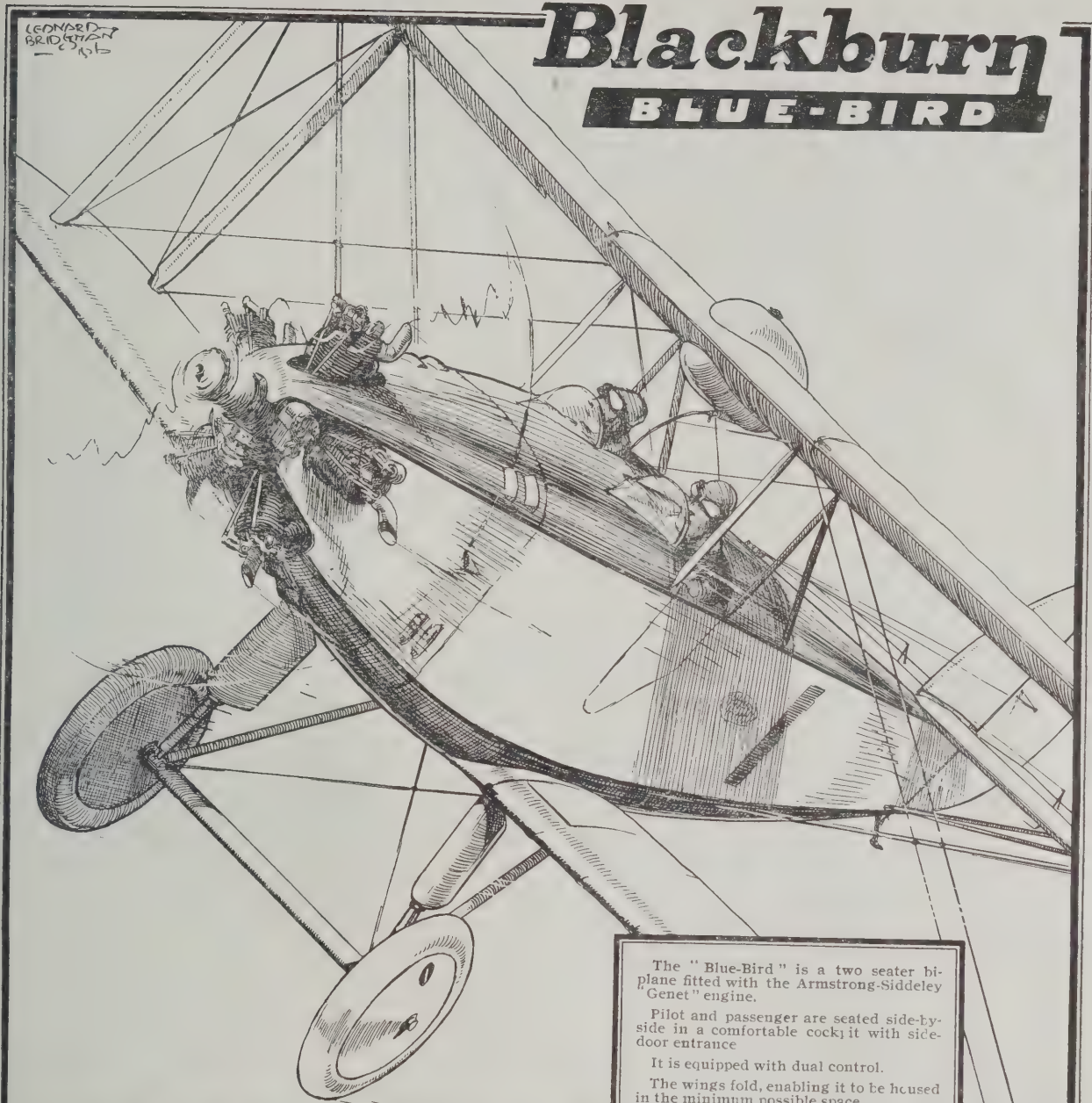
They had flown to Australia to gather information about long-distance Imperial routes and they had gathered much useful information. He wished to make it clear that this flight could not have taken place without the help of many people, and at least 25 had contributed to the finance, while all along the route he had asked in advance for, and had obtained on arrival, the help of people who in many cases had never seen an aeroplane before.



THE HUMAN FACTOR.—Left to right, Mr. C. S. Capel, engineer, of Armstrong-Siddeley Motors Ltd.; Mr. Alan Cobham, pilot; Sgt. Ward, R.A.F.; and the late Mr. Arthur Elliott, who was killed near Basra on the outward journey.

Blackburn

BLUE-BIRD



The "Blue-Bird" is a two seater bi-plane fitted with the Armstrong-Siddeley "Genet" engine.

Pilot and passenger are seated side-by-side in a comfortable cockpit with side-door entrance

It is equipped with dual control.

The wings fold, enabling it to be housed in the minimum possible space

Either for the private owner or the flying school the "Blue-Bird" is ideal.

It has behind it 17 years' experience of aircraft design and construction, and the firm's reputation for sound British workmanship.

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WINNER OF

The GROSVENOR CUP

(PILOTED BY: SQN. LDR. LONGTON, D.F.C., A.F.C.)

BLACKBURN

AEROPLANE & MOTOR CO. LTD.

LEEDS.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

He paid a handsome tribute to the work Sgt. Ward had carried out single-handed on the journey from Basra to Australia, and said that the added assistance of Mr. Capel was invaluable when he was trying to make a quick flight home and cover two stages a day instead of one.

He hoped, Mr. Cobham added in conclusion, that the success of the flight did not end there, but that the people of Great Britain would realise the great importance of flying to the future of the British Empire.

Mr. Cobham brought with him a parcel addressed to the Colonial Secretary containing a letter from the Governor-General of Australia to the King, and another to Mr. Amery, the Secretary of State for the Dominions.

He also brought letters from Mr. Bruce, the Prime Minister of Australia, to Sir Samuel Hoare, to Mr. Amery, to Lord Southborough, and, among other people, to Lord Haig, Sir Charles Wakefield, and Mr. Lloyd George.

TO WHOM THE BENEFIT?

The tumult and the shouting having died and the various people of exalted rank having departed, the question arises as to what is the net benefit to anybody of the whole flight.

Mr. Cobham himself, to give him his due, can have derived no very great financial benefit. There was no big money prize attached to the flight as there was for the Smith Brothers' pioneer flight to Australia. Mr. Cobham has probably been quite reasonably well paid by *The Daily Mail* for the exclusive right of his story of the flight, but one hardly imagines that the sum represents a fortune for Mr. Cobham's old age.

He may, and one hopes he will, be very well paid for his lecture tour in the States, though one would not be at all surprised if, on arriving there, he discovers that the citizens of the United States are very little interested in flights within the British Empire, considering that American aviators have already flown the Atlantic and the Pacific, as well as flying right round the World, and considering that every three days Uncle Sam's Trans-Continental Air Mail between New York and San Francisco covers a distance approximately equal to that from London to Australia.

The flight, as a flight, was a very stout effort. There are dozens of pilots in this country who wish that they had the opportunity of doing it, and who might have done it if only they had possessed Mr. Cobham's Heaven-sent gift of persuading people to help his enterprises.

MR. COBHAM'S GENIUS.

One has watched Mr. Cobham's career with close interest ever since he began joy-riding in a small way of business. And all the way through he has owed his success to that ability. In those days he used to persuade local newspaper people and local music halls and theatres to help him to advertise his own particular corner of aviation, and the recent amazing demonstration when several millions of people suffered personal inconvenience in order to see him fly along the Thames and alight thereon is simply the result of that same persuasive ability developed to the *n*th power.

The reason why Mr. Cobham has gone from success to success along these lines is that he has always delivered the goods. Whatever he has persuaded other people to advertise that he would do, that same thing he has done. It would be a great thing for British trade the World over if all British commercial men delivered the goods as completely as does Mr. Cobham.

In one of his numerous speeches, Mr. Cobham remarked that this journey to Australia and back was not a stunt. It was not. It was an excellently-organised and carefully-executed example of good steady flying with as little as possible left to chance.

That is were Mr. Cobham has always scored. He takes no chance when chances can be avoided and trusts little to luck, preferring to rely on organisation. On that account his successes are all the more deserved. There is little merit to be attached to a success which happens through sheer good luck.

STUNT OR ACHIEVEMENT?

But the newspapers chose to make a stunt of the flight. That was why even more people gathered to see Mr. Cobham arrive than crowded to welcome Miss Mary Pickford or Mr. Charles Chaplin.

The psychology of those who control our newspapers is beyond comprehension. On what grounds, for example, can one explain the chartering by *The Daily Mail* of a three-engined machine from Imperial Airways Ltd. to fly by night from Paris to London over an unlighted air route simply to bring photographs of Mr. Cobham alighting on the Seine. The cabin of the machine was turned into a dark-room in order to develop and print the photographs on the way.

Some tens of thousands of pounds' worth of aeroplane and the lives of a very valuable pilot and of a mechanic presumably also valuable, and of sundry members of the staff of *The Daily Mail*, were all subjected to a greater risk than that entailed in ordinary daylight flying, just to get a few photographs to England a few hours earlier than they would have arrived by land and sea.

Why was it done? Was it because the British public is so wildly interested in aviation that it had to have those photographs on Saturday morning? Or was it because Mr. Cobham was already such a National, even Imperial, hero, that the public had to have ocular evidence that he had reached Paris in safety? One hardly thinks that the millions of toilers in this country are so air-minded as all that.

Or was it that by this particular stunt within a stunt, as a means of securing a beat or scoop, or whatever Fleet Street calls it, over its contemporaries, *The Mail* wished to impress on its readers its own phenomenal enterprise, and to demonstrate that the Northcliffe spirit is not dead, nor even gone before?

That little trip must have cost *The Mail* a good few hundreds of pounds. It would be interesting to have actuarial figures to show how the organisers of such a stunt are likely to get their money back.

THE PSYCHOLOGICAL MOMENTUM.

However, stunt or no stunt, so far as the Australian flight is concerned, how is British Aviation likely to profit by the way in which all the newspapers have made a stunt out of a very sound and praiseworthy flight? Are any of those millions of people who gathered along the banks of the Thames any more air-minded than they were before?

The actual flying of the D.H.50 over the bridges was nothing like as thrilling to watch as was the flight under the Tower Bridge in 1913 by a Short biplane piloted by Mr. Frank McClean—now Sir Francis, an it please you, Mesdames and Messieurs. And the actual alighting opposite the Houses of Parliament had less of entertainment about it than had the performance some six years ago of the amphibian Vickers Viking which squatted on the river at low tide, solemnly waddled onto a mud bank on its own wheels under its own power, rested there awhile, waddled back into the water again and departed therefrom with all the dignity of a pelican—which curious bird, as you may not know, is a very fine aviator, so that one is not casting aspersions on the Viking in perpetrating this simile.

There would be much interest, if it were possible to discover the facts, in finding out whether anybody has been irresistibly impelled by the mass psychology of that vast concourse to rush off and buy a Moth, or even to go and enlist in the Royal Air Force, or whether any City man has been suddenly possessed by an attack of air-mindedness and has hastened to pay up his arrears of income-tax so that our first line of defence may be the more adequately financed—for naturally, the poor wretch would be ignorant of the fact that so far this year the Air Ministry has spent very little of the millions voted for new aircraft in 1926-27.

Personally, one doubts very much whether any of these things have been brought about by the newspapers' stunts.

THE SURVEY QUESTION.

As to another aspect of the flight, we are told that it was to be of the nature of a survey of the route from London to Australia.

It is true that by dashing through a country one may notice salient features which escape the notice of those who live there, and that thus one may write a truer book about that country than any of its habitual residents could write. So it is possible that Mr. Cobham's eye may have noticed certain things which have escaped the habitual users of the routes along which he flew.

Somewhere one has seen that Mr. Cobham has discovered a couple of excellent air ports on the shores of the Persian Gulf which apparently escaped the notice of those sent by Imperial Airways with the express intention of surveying the route from Cairo to Karachi, and that Mr. Cobham judged to be quite impossible a couple more places which the said surveyors had approved as landing places.

Yet one cannot help thinking that if the ultimate organisers of the route from, let us say, Calcutta to Melbourne, had a serious talk with Major Norman Brearley of the Western Australian Airways and with Mr. Hudson Fysh of the Queensland and Northern Territory Aerial Services Ltd. they might learn more about flying in Australia than even Mr. Cobham can tell them.

And if they consulted Mr. Ronald Kemp and Mr. Fred Raynham, who have surveyed photographically a good many thousands of square miles in Burma and the Straits Settlements and Borneo, they might learn more about monsoon weather in the East Indies than Mr. Cobham learned during his lamentable disappearance for three days at Victoria Point.

And it is possible that if they paid a visit to our very good friends, the officers of the Royal Dutch Air Service, disposed at large on their various aerodromes in the Dutch oil islands over which Mr. Cobham flew, they might become better acquainted with the possibilities of an air line on the direct route from Singapore to Port Darwin than is Mr. Cobham himself.

Of course, all these consultations would take time. But one imagines that even the enterprise of Imperial Airways will scarcely run to extending the Cairo-Karachi route to

The GREAT AUSTRALIAN FLIGHT

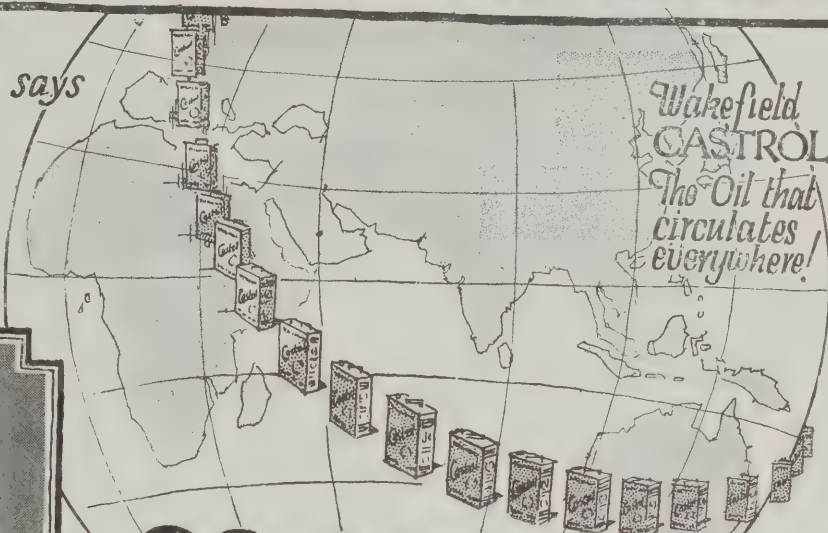
Alan Cobham says

"Many thanks wonderful distribution Wakefield Castrol Oil, found ample supplies everywhere and quality same throughout, the body of the lubricant never failed us the whole of our flight.—COBHAM."



A Review of AERIAL ACHIEVEMENTS on WAKEFIELD CASTROL.

Every British flying record or achievement has been made on this lubricant. It was used in the first aeroplane flight across the Atlantic (the late Sir John Alcock on the Vickers-Vimy), the flight of H.M. Airship "R.34" to America and back, the first direct flight from England to Australia, and from Cairo to the Cape, Capt. D'Oisy's flight to Tokio, the Empire Air Tour of Sir Sefton Brancker and Mr. Alan Cobham to Rangoon and back, Mr. Alan Cobham's recent Survey Flight to Cape Town and back, and to Australia and back, and in the Bristol "Jupiter" 25,000 Miles Endurance Test. Six out of Seven Aerial Derbys and every King's Cup Race have been won upon this World-famous Lubricant.



Wakefield
CASTROL
The Oil that
circulates
everywhere!

28,000 Miles on Wakefield CASTROL without one engine fault!

THROUGHOUT Mr. Cobham's wonderful flight to Melbourne and back, despite conditions of unexampled severity—tropical heat and raging monsoon—the Armstrong Siddeley "Jaguar" engine ran with absolute reliability, lubricated with Wakefield CASTROL—the World-famous Product of an All-British Firm. This same engine and De Havilland aeroplane had previously carried Mr. Cobham through his 16,000 miles Cape Survey Flight last winter, and on this occasion also Mr. Cobham used CASTROL.

Whenever absolute reliability and maximum efficiency are essential, the lubricant chosen is inevitably—



C. C. WAKEFIELD & CO., LTD., Wakefield House, Cheapside, London, E.C.2.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Calcutta, Kuala Lumpur, Camooweal and Canberra without spending a little more money and time than that contributed to Mr. Cobham's survey of the route.

Nevertheless, even if all these demonstrations do not cause an immediate boom in Civil Aviation, and even if it does not cause over-crowding at the recruiting depots of the Royal Air Force, and even if a further survey of the air route to Australia should be necessary before an air line can be fully established, we have had a magnificent example of what British aeronautical engineering can do, and Mr. Cobham has at any rate consolidated his position as the World's leading commercial aviator.—C. G. G.

ENTERTAINING MR. COBHAM.

On Oct. 4 Sir Charles Wakefield gave a lunch to some 600 guests at the Connaught Rooms to meet Mr. Cobham.

Sir Charles referred to Mr. Cobham's genius for organisation and his bland imperturbable will-power. Mr. Cobham thanked Sir Charles for making the flight a financial possibility. He said that the Australian Government had sent Col. Brinsmead, Director of Civil Aviation, from Melbourne to Port Darwin to meet him, a distance equal to that from London to Constantinople—which showed how much interest they took in the flight in Australia. [Or else it showed how little the Australians think of covering long distances by air, thanks to their 100 per cent. efficient air lines.—Ed.] Speeches were also made by Lord Thomson, Sir Sefton Brancker, Lord Novar, Major-Gen. Sir Neville House, V.C. (Australian Minister for Defence), Mr. J. G. Latham (Australian Attorney-General), Lord Riddell, Lord Dewar, and the Spanish Ambassador.

On the evening of Oct. 4, Mr. Gordon Selfridge held a reception in his mammoth store, as a "private view" of the D.H.50, the Jaguar engine and other accessories (see catalogue hereinbefore) to the Australian flight. Several peers, a number of knights and about a dozen mayors of London boroughs were among those present. Sir Sefton Brancker addressed them, under the ægis of the Air League—which thus steps into the circle of Mr. Cobham's limelight, or at any rate into its reflection. Mr. Cobham said that the reason why aviation had not gone ahead was that it had lacked publicity, and he had done his utmost to give it publicity. [Carried without opposition.—Ed.]

ENTERTAINING SIR ALAN COBHAM.

On Oct. 5 the Department of Government Hospitality, incited by the Air Ministry, gave a lunch at the Carlton to Mr. and Mrs. Cobham.

After lunch Sir Samuel Hoare, having remarked that it was rarely that Government hospitality was extended to a British subject, and that a precedent was being created by inviting ladies to such a function, announced that His Majesty the King had been pleased to confer a Knighthood of the British Empire on Mr. Cobham. So henceforth our most prominent commercial aviator will be known as Sir Alan Cobham.

AERONAUTICAL ENGINEERS AND SIR ALAN COBHAM.

The dinner to be given by the Institution of Aeronautical Engineers in honour of Sir Alan Cobham and his companions, Serjeant Ward, R.A.F., and Mr. Capel, will take place at Kettner's Restaurant, Church Street, W.1, on Friday next, Oct. 8, at 7.45 p.m. for 8 p.m.

Tickets (12s. 6d. each for members, 15s. each for guests) may be obtained from the Hon. Secretary, The Institution of Aeronautical Engineers, 34, Broadway, S.W.1.

MR. COBHAM'S TIME-TABLE.—1926.

OUTWARD JOURNEY:—Rochester—Naples, June 30. Athens, July 1 and 2.

Alexandretta, July 3. Baghdad, July 4. Basra, July 5 to 12. Bushire, July 13. Bundar Abbas, July 14 to 17.

Karachi, July 18 and 19. Bahawalpur, July 20. Delhi, July 21. Allahabad, July 22. Calcutta, July 23.

Akyab, July 24. Rangoon, July 25 and 26. Victoria Point, July 27. Penang, July 28. Singapore, July 29 and 30.

Muntok, July 31. Batavia, Aug. 1. Sourabaya, Aug. 2. Bima, Aug. 3. Kupang (Timor), Aug. 4.

Port Darwin, Aug. 5 to 7. Camooweal, Aug. 8 and 9. Charleville, Aug. 10. Sydney, Aug. 11 to 14. Melbourne, Aug. 15 to 28.

HOMEWARD JOURNEY:—Melbourne—Adelaide, Aug. 29. Oodnadatta, Aug. 30. Alice Springs, Aug. 31. Katherine, Sept. 1. Port Darwin, Sept. 2 and 3.

Kupang, Sept. 4. Sourabaya, Sept. 5. Muntok, Sept. 6. Penang, Sept. 7. Puket, Sept. 8. Victoria Point, Sept. 9 to 13. Rangoon, Sept. 14 to 17. Akyab, Sept. 18.

Calcutta, Sept. 19 and 20. Allahabad, Sept. 21 and 22. Karachi, Sept. 23.

Chabar, Sept. 24 and 25. Basra, Sept. 26. Alexandretta, Sept. 27.

Athens, Sept. 28. Marseilles, Sept. 29. Paris, Sept. 30. London, Oct. 1.

THE SMITH BROTHERS' TIME-TABLE.—1919.

Hounslow—Lyon, Nov. 12. Pisa, Nov. 13 and 14. Rome, Nov. 15. Taranto, Nov. 16. Suda Bay, Nov. 17.

Cairo, Nov. 18. Damascus, Nov. 19. Ramadie, Nov. 20. Basra, Nov. 21 and 22. Bundar Abbas, Nov. 23.

Delhi, Nov. 25 and 26. Allahabad, Nov. 27. Calcutta, Nov. 28.

Akyab, Nov. 29. Rangoon, Nov. 30. Bangkok, Dec. 1. Singora, Dec. 2 and 3. Singapore, Dec. 4 and 5.

Kalidjtatta (Java), Dec. 6. Sourabaya, Dec. 7. Bima, Dec. 8. Atamboca (Timor), Dec. 9. Port Darwin, Dec. 10.

The **Silver Spruce**, **English Ash** and other timbers employed in the construction of Mr. Cobham's de Havilland machine, is as good and sound to-day as when first put in.

This timber was supplied by

Wm. Mallinson & Sons, Ltd.

130-140, Hackney Road, London.

The **Pioneers** and to-day the **Largest Suppliers**
of
Aeroplane Timbers.

MR. ALAN COBHAM'S FLIGHT TO AUSTRALIA.



SHORT ALL-METAL FLOATS

were utilised by Mr. Cobham on his D.H.50.J. machine during his magnificent flight across half the world, flying over many thousands of miles of ocean.

These floats, upon which the success of the flight so very largely depended, were specially designed and built by the pioneers of British All-Metal Aircraft.

SHORT BROS.

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Seaplane Works:

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LINKING

The first direct flight across the Atlantic

June, 14th-15th. 1919.



Capt. Sir John Alcock, K.B.E., D.S.C. Lieut. Sir A. Whitten Brown, K.B.E.

The first flight from Cairo to South Africa (Bulawayo)

Feb. 22nd. to March, 5th. 1920.



Col. Sir Hesperus P. Van Ryneveld,
K.B.E., D.S.O., M.C.

Sqd. Ldr. Sir C. J. Quinton Brand
K.B.E., D.S.O., M.C.

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URREY.

The first flight from England to Australia Nov.12th.to Dec.10th.1919. ~ 27 days, 21 hrs.



Capt. Sir Ross Smith, K.B.E., M.C., D.F.C.



Lieut. Sir Keith Smith, K.B.E.

The first flight from London to Central Africa (*Tabora*) Jan.24th.to Feb.27th. 1920.



Capt. S. Cockerell, A.F.C.



Capt. F. C. Broome, D.F.C., A.F.C.

THE ROYAL AIR FORCE.

The London Gazette.

GENERAL DUTIES BRANCH.—The following are granted perm. comms. as Plt. Offs. with effect from Sept. 18, 1926, and seniority of Sept. 18, 1925:—C. S. Cadell, J. H. E. Jones.

The following are granted S.S. comms. as Plt. Offs. on probation with effect from and with seniority of Sept. 18:—G. C. Bainbridge, G. Bartholomew, A. K. K. Calwell, J. F. Duff, F. G. Fairhead, G. P. T. Gibbons, M. Griffiths, H. C. D. Hayter, D. S. King, F. E. L. Reynolds, V. D. Morshead, J. A. Rogers, E. L. J. Rowe, H. H. R. Schleman, C. K. T. Hughes, G. R. Weighill.

The following are granted temp. comms. as Flg. Offs. on seconding for four years' duty with the R.A.F. (Sept. 18):—B. F. R. M. Freeman (Lt., King's Own Royal Regiment), J. W. Thompson (Lt., R.A.).

The following Flg. Offs. are transferred to the Reserve, Class A:—H. MacMillan (Sept. 27), B. J. Finn (Sept. 29). Flg. Off. (Hon. Flt. Lt.) F. B. Lawrie (Lt., R.N., ret'd.) resigns his S.S. comm. (Sept. 30); Flg. Off. J. A. P. A. Yearsley relinquishes his S.S. comm. on account of ill-health (Sept. 29).

MEDICAL BRANCH.—The following Flg. Offs. are granted perm. comms. in this rank (Sept. 29):—B. W. Cross, J. MacC. Kilpatrick, M.B.

CHAPLAINS' BRANCH.—The Rev. A. H. Dolphin is granted a S.S. comm. as a Chaplain, with the relative rank of Sq. Ldr. (Sept. 6).

MEMORANDUM.—Sec. Lt. A. E. Morecroft is deprived of his honorary comm. on conviction by the Civil Power (Aug. 9).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. in Class A.A., General Duties Branch, as Plt. Offs. on probation:—A. L. Muir (Sept. 13), E. L. Purdy, M.C. (Sept. 16).

The following are confirmed in rank:—Flg. Off.—C. E. M. Pickthorn, M.C. (Sept. 23). PLT. OFFS.—G. N. Warwick (Aug. 28); H. C. Barrett (Sept. 28).

The following Flg. Offs. are transferred from Class A to Class C:—W. E. de B. Diamond (Sept. 2); F. A. Smith, A.F.C. (Sept. 25). Plt. Off. E. F. S. Hughes is transferred from Class B.B. to Class C (Sept. 28); Flt. Lt. G. Kinneir is transferred from Class D.2 to Class D.1 (May 7). Flg. Off. G. Colledge relinquishes his comm. on completion of service (May 29).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Plt. Offs.:—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—L. A. Hackett (Sept. 7).

Appointments.

Week ending Oct. 4.

GENERAL DUTIES BRANCH.—Group Captains A. B. Burdett, D.S.O., to Air Ministry on appointment as Deputy Director of Organisation, 21/9. R. P. Mills, M.C., A.F.C., to H.Q., India, for Air Staff duties, 21/9.

Wing Commanders D. L. Allen, A.F.C., to No. 2 Wing H.Q., India, pending taking over command, 21/9. L. A. Pattinson, D.S.O., M.C., D.F.C., to H.Q., India, for Air Staff duties, 21/9. E. R. C. Nanson, D.S.C., A.F.C., to Station Commandant, Hinaidi, for Air Staff duties, 21/9. A. B. Gaskell, D.S.C., to H.Q., Iraq, for Air Staff (Armoured Car) duties, 21/9.

Squadron Leaders J. McCrae, M.B.E., to Station Commandant, Hinaidi, 21/9. G. S. M. Insall, V.C., M.C., to Station H.Q., Basrah, 21/9. A. S. Morris, O.B.E., to No. 5 Arm. Car Coy., Iraq, 21/9. C. E. H. Medhurst, O.B.E., M.C., to H.Q., Iraq, 21/9. C. H. Keith, to No. 70 Sqn., Iraq, 21/9. F. J. Vincent, D.F.C., to Aircraft Depot, Iraq, 21/9. C. O. F. Modin, D.S.C., to H.M.S. *Eagle*, 30/9. S. R. Watkins, A.F.C., to R.A.F. Base, Gosport, 20/9.

Flight Lieutenants C. Bounphrey, D.F.C., to No. 481 Flight, Malta, 21/9. A. H. Flower, to No. 208 Sqn., Egypt, 21/9. P. Murgatroyd, to No. 4 F.T.S., Egypt, 21/9. H. E. Walker, M.C., D.F.C., to H.Q., Special Reserve and Auxiliary Air Force, 21/9. W. A. C. Morgan, M.C., A. H. Orlebar, A.F.C., R. M. Treveltham, M.C., W. E. G. Mann, D.F.C., and G. I. Ormerod, to H.Q., Iraq, 21/9. T. Henderson, M.C., A.F.C., and K. B. Lloyd, A.F.C., to No. 70 Sqn., Iraq, 21/9. T. C. Thomson and P. J. Clayson, M.C., D.F.C., to Aircraft Depot, Iraq, 21/9.

Flying Officers T. Marchant, C. Snow and A. P. Marchant, M.B.E., D.S.M., to Aircraft Depot, Iraq, 21/9. H. S. Sandiforth and M. W. C. Ridgway, to No. 6 Arm. Car Coy., Iraq, 21/9. E. D. Barnes and V. Harris, to No. 5 Arm. Car Coy., 21/9. M. H. Ely, to Station Commandant, Basrah, 21/9. J. N. Boothman and (Hon. Flt. Lt.) U. C. de Burgh, to No. 55 Sqn., Iraq, 21/9. G. N. P. Stringer, to No. 30 Sqn., Iraq, 21/9. F. E. Nuttall, to No. 84 Sqn., Iraq, 21/9. R. R. Dennett, to Aircraft Depot, Iraq, 21/9. J. H. Parry and C. W. Switzer, to No. 70 Sqn., Iraq, 21/9. H. T. J. Jagger, to No. 6 Sqn., Iraq, 21/9. (Hon. Flt. Lt.) A. E. G. Forrest, to Aircraft Depot, India, 21/9. R. I. Bateman, J. H. Hutchinson and R. A. Seaton, to No. 4 F.T.S., Egypt, 21/9. H. M. Whittle, to No. 481 Flight, Malta, 21/9. W. J. P. Sloan, to No. 27 Sqn., India, 21/9. V. D. Bingham-Hall, M.C., and C. H. Noble, to No. 208 Sqn., Egypt, 21/9. A. J. Holmes, to No. 28 Sqn., India, 21/9. C. A. C. Fidler, D.C.M., to Electrical and Wireless School, Flowerdown, 11/10. G. P. H. Carter to No. 11 Sqn., Netheravon, 17/9. C. G. C. Sullivan, to R.A.F. Training Base, Leuchars, 27/9. N. W. F. Mason, to No. 24 Sqn., Kenley, on transfer to Home Estab., 21/9. F. I. Collinson, to No. 24 Sqn., Kenley, on appointment to a S.S. Comm., 6/9. W. A. Chase, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/8. M. H. Fitzgerald, to R.A.F. Depot, Uxbridge, 27/9.

Pilot Officers S. H. Hardy, F. B. Tomkins and R. Matheson, to No. 84 Sqn., Iraq, 21/9. C. Heard-White, to No. 55 Sqn., Iraq, 21/9. J. H. Leach, to No. 5 F.T.S., Sealand, 4/10. R. L. Burnett, to No. 20 Sqn., India, 21/9.

MEDICAL BRANCH.—Flying Officer C. W. Coffey, to Station H.Q., Bircham Newton, 18/9.

STORES BRANCH.—Squadron Leaders F. G. M. Williams, to H.Q., Iraq, 21/9. F. Fawcley, M.B.E., to Supply Services (Directorate), Iraq, 21/9. F. E. J. Coates, to H.Q., Iraq, 21/9. H. T. Foxden, to Fighting Area H.Q., Uxbridge, 20/9.

Flight Lieutenants L. H. Vernon, to Wessex Bombing Area, Andover, 15/9. T. G. Bowler, to Station H.Q., Andover, 28/8. G. A. Curtis, to H.Q., Iraq, 21/9.

Flying Officers H. J. Payne, to Station Commandant, Basrah, 21/9. A. J. Walker, to Stores Depot, Iraq, 21/9. G. F. P. Warren, to No. 11

Sqn., Netheravon, 28/8. C. Hanson-Abbott, to E. and W. School, Flowerdown, 28/8. C. P. Wingfield, to H.Q., Special Reserve and Auxiliary Air Force, 21/9. F. B. Ludlow, O.B.E., M.C., to Aircraft Depot, India, 21/9. Pilot Officers H. N. Davies, to Home Aircraft Depot, Henlow, 28/8. R. H. Clay, to Aircraft Depot, Iraq, 21/9.

ACCOUNTANT BRANCH.—Squadron Leader R. Whyte, to Aircraft Depot, Iraq, 21/9. Flight Lieutenant J. C. Brice, to Aircraft Depot, Iraq, 21/9. Flying Officers F. C. Chalmers, to Brigade Accountant Office, Iraq, 21/9. R. T. Carter, to No. 5 Arm. Car Coy., Iraq, 21/9. H. J. Titherington, to No. 6 Arm. Car Coy., Iraq, 21/9. E. Smith, to No. 55 Sqn., Iraq, 21/9. Pilot Officer R. A. J. Mullarkey, to R.A.F. Base, Gosport, 20/9.

The Service Cruise to Aden.

The Flight of Vickers Victoria aeroplanes (two Napier Lions) under Air Commodore C. R. Samson, C.M.G., D.S.O., A.F.C., which left Heliopolis on Sept. 16, for a cruise to Aden and back, landed at Heliopolis at 3.30 p.m. on Sept. 29.

An Assortment of Accidents.

On Sept. 28, two Supermarine Southampton flying-boats belonging to No. 480 (C.R.) Flight, Calshot, met with accidents in Southampton Water.

The first boat, when taking off, was involved in the wash of a passing liner and the wings were damaged.

The second accident occurred when a boat was returning from a night flight. Owing to the glassy state of the sea, the pilot misjudged his distance. The boat hit the water hard, rebounded, and in striking the water again turned over on its side. Sq. Ldr. A. Durston, A.F.C., received injuries to the face, Flg. Off. A. E. Haes was removed to Haslar Hospital suffering from compound fracture of the thigh and other injuries, and AC. Fisher suffered from shock and minor injuries. The machine sank, but has been raised and towed ashore.

On Oct. 1 a Bristol Fighter of No. 20 (Army Co-operation) Squadron station at Peshawur hit an obstruction on taking off, caught fire, and was wrecked. The pilot, Flg. Off. P. H. Nicholls, was severely injured, and Lt. AC. G. Cairns was slightly injured.

On Sept. 30 a torpedo machine belonging to the R.A.F. Base, Gosport, while carrying out torpedo-dropping practice, fell in the Solent. The Pilot, Plt. Off. D. S. E. Vines, was picked up by a lifeboat belonging to the Southampton and Isle of Wight Steampacket Company's steamer, *Queen*, and the machine was taken in tow by H.M. mooring ship *Steady*.

On Sept. 30 a Hawker Woodcock belonging to No. 17 (Fighter) Squadron, Hawkinge, was forced to alight in the sea off St. Leonards, owing to engine trouble. The pilot, F-Sgt. Payne, was picked up by a fishing boat.

These accidents might be taken as showing why the death-rate is high in the R.A.F., for any one of these crashes might easily have caused a death or two. But the curious thing is that genuine accidents such as these, which cannot be foreseen or prevented, or else are caused by pure errors of judgment or plain bad flying, seldom cause deaths.

A great number, probably a majority, of the fatal accidents are due to machines of obsolete types, which ought to have been abolished from the R.A.F. years ago, stalling and diving and spinning. And the possibility of such accidents could be stopped within three months if someone in high position in the Air Council had the power—and the initiative—to give orders instead of waiting for technical experts to report and make up their minds.—C. G. G.

Non-Regular Squadrons and their Equipment.

Two new squadrons, one Special Reserve and the other Auxiliary, to be formed this year under the Royal Air Force Expansion scheme, come into being on Oct. 5. These are No. 503 (Special Reserve) Bombing Squadron and No. 605 (County of Warwick) Auxiliary Bombing Squadron.

No. 503 Squadron will be equipped with Avro Aldershot and Fairey Fawn bombing aircraft and will be stationed at Waddington, near Lincoln.

No. 605 Squadron will have Avro 504 and D.H.9a aircraft and will be stationed at Castle Bromwich, near Birmingham.

One merely wonders mildly why Auxiliary squadrons, the pilots of which, by the nature of their engagements, get less flying than pilots in any other category in the R.A.F. should be obliged to fly gas,—which are admittedly more difficult, and therefore more dangerous, for an inexperienced or out-of-practice pilot to fly than are any others in the Air Force.

Presumably the Auxiliary Squadrons have to make-do with anything that is too obsolete for the Regulars—and that means very obsolete, seeing that we are still using ten-year-old designs in Iraq—just as Territorial Batteries used to play with old guns which were useless to the Regular Gunners. But obsolete guns did not kill their users as easily as do obsolete aircraft. Still, the Air Council might have dug out some R.E.8s from A.D.C. Aircraft Ltd.—and that would have been worse.

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R.A.F. SPORTS.

The R.A.F. Golf Championship.

The R.A.F. Golf Championship Meeting was held at Camberley on Sept. 27, 28, and 29.

The qualifiers and draw for the first round were:—

Pt. Off. H. L. R. Gough (163) v. Sq. Ldr. Brown (159). Flt. Lt. E. A. Fawcus (167) v. Flt. Lt. E. L. Hope (171). Flg. Off. J. S. Stevinson (166) v. Sq. Ldr. Hayward (157). Sq. Ldr. A. S. M. Lowe (167) v. Flt. Lt. D. Craik (160).

The results of the three days' play were:—

FIRST ROUND.—Sq. Ldr. Brown beat Flg. Off. H. L. R. Gough by 4 and 3. Sq. Ldr. C. H. Hayward (holder) beat Pt. Off. G. Stevinson by 4 and 3. Sq. Ldr. A. S. M. Lowe beat Flt. Lt. Craik by 2 and 1. Flt. Lt. E. L. Hope beat Flt. Lt. E. A. Fawcus by 2 and 1.

SEMI-FINAL ROUND.—Hayward beat Lowe by 5 and 4. Hope beat Brown by 5 and 4.

FINAL ROUND.—Sq. Ldr. Hayward beat Flt. Lt. Hope over 36 holes by 4 holes up and 3 to play.

The R.A.F. Football Association.

The draws for the preliminary rounds of the Open and Junior Cups have been made and all matches are to be played on or before Nov. 30. Full particulars may be obtained from the Hon. Secretary, R.A.F. Football Association, H.Q., Coastal Area, R.A.F., London.

The fixture list for the season 1926-27 is as follows:—

Oct. 27.—Football Association XI, Ipswich.
Nov. 6.—Tottenham Hotspur F.C., Tottenham; Nov. 17.—Oxford University F.C., Uxbridge; Nov. 27.—Cambridge University F.C., Henlow.
Jan. 15.—Norfolk County F.A., Yarmouth; Jan. 22.—Corinthians F.C., Crystal Palace.
Feb. 5.—Spartan League, Slough; Feb. 12.—West Ham United F.C., Upton Park.
Mar. 12.—Army, Tidworth; Mar. 23.—Civil Service, Salisbury.
Apr. 2.—Royal Navy, Uxbridge.
Oct. 11.—Probables v. Possibles (Trial), Uxbridge; Oct. 18.—Officers v. The Rest (Trial), Uxbridge.
Nov. 6.—Army Officers v. R.A.F. Officers, Aldershot.
Mar. 5.—R.A.F. Senior Cup Final, Uxbridge; Mar. 26.—R.A.F. Junior Cup Final, Uxbridge.

A Service v. Industry Rugger Match.

R.A.F., Uxbridge, v. Napier.—This match was played at D. Napier and Son Ltd.'s sports ground at Gunnersbury Park and resulted in a win for Uxbridge by a dropped goal and a try to nil.

The game was very fast and strenuous in the first half, but towards the end the hot weather had its effect on some of the players.

There were many occasions during the first half when there were break-aways by three-quarters and forwards when tries seemed certain, but half-time arrived with blank score-sheet.

The second half saw pressing by both sides, with Uxbridge probably being slightly the better team, and a fine piece of work on the part of their scrum half was rewarded by a try from a fine run just inside the Napier 25, touching down nearer the flag than the post. The converting kick went rather wide of the post.

Napiers made several strenuous attempts to equalise, but without success, and within a few minutes of time an Uxbridge three-quarter took a drop at goal which proved successful.

A return match has been fixed up at Uxbridge for Oct. 30.

The teams were:—Napier.—R. W. Mark, H. W. Whympier, A. K. Harvey, A. B. Wright, P. Foulds, H. Huggins, H. Owen, G. Pate, C. Robson-Elgie, H. L. Cleverley, G. E. Young, H. J. S. Rowe, A. E. Benson, S. Pearson, and E. Scott.

R.A.F., Uxbridge.—L.A.C. Bailey, Cpl. Turner, AC. Scholfield, AC. Moseley, L.A.C. Arrows, Cpl. Smithson, AC. Webb, Flt. Lt. Carr, Sgt. Broadway, Sgt. More, Sgt. Buckle, AC. Warren, AC. Wray, AC. Booth, L.A.C. O'Malley.

The Yarmouth Re-union Dinner.

The Seventh Annual Re-Union Dinner for Officers and ex-Officers who have served at the Air Station, Great Yarmouth, will be held on the last Saturday in October (30th), at the Café Royal, Regent Street, London W., at 7.30 for 8.0.

Application for tickets (15s. 6d. each, exclusive of wine) should be made to G. F. H. Bloom, 17, Welbeck Street, W.1.

A Boxing Handbook.

["The R.A.F. Boxing Association Handbook," 1926-27. 1s. net.]

In his introduction to the present issue the compiler points out that since the publication of the last Handbook the R.A.F. Boxing Association has become an amateur body. The rules of the Imperial Services' Boxing Association have been re-arranged and certain new rules have been introduced. These alterations and additions have been incorporated in the Handbook.

Other information contained in the Handbook includes the R.A.F. winners at the I.S.B.A. Meetings; the winners of the R.A.F. Individual Championships; and a list of Referees and Judges. The rules for the various Championships are also laid down.

Section II of the Handbook deals with the organisation of boxing meetings and gives full lists of the officials and equipment required.

Section III shows the method of scoring points, etc.

The whole Handbook has been compiled with great care and is complete in every way.

MILITARY EDUCATION.

Those who are interested, as all officers of the R.A.F. should be, in the inside history of the War 1914-18 should make a point of attending the series of lectures to be given at King's College, London (Strand, W.C.2), during the present month. These lectures are entitled, "Ten Years Ago," and deal with the Military operations of 1916.

The lecturer is Major W. E. de B. Whittaker, The King's Regiment, Reserve of Officers, and the dates and subject matter are as follows:—

Oct. 11.—"The Battles of the Somme, 1916: Special Problems of the Great War; the Setting-in of Siege Warfare; State of the Combatants in 1916; Preparations for the Somme Offensive; the First Phase of the Battles." Chairman: Brigadier-General J. E. Edmonds, C.B., C.M.G., Director, Military Branch, Historical Section, Committee of Imperial Defence.

Oct. 18.—"The Battles of the Somme, 1916 (continued): Second and Third Phases; the Coming of the Tank; the Effect of the Mechanical in War; Immaturity of the Weapon." Chairman: The Principal of King's College.

Oct. 25.—"The Battles of the Somme, 1916 (continued): Political Factors; Statesmen and Soldiers; the Effects of the Battle; British Depression, French Depression; German Depression." Chairman: Lieutenant-General Sir Archibald Montgomery-Massingberd, K.C.B., K.C.M.G.

Readers of THE AEROPLANE will remember Major Whittaker as being closely concerned with aviation and with this paper before and after the War.

TURKISH AVIATION TAXES.

According to *The Times*:—

The taxes in aid of aviation which the Aviation League asked the Turkish Government to authorise are now being collected. They are styled "voluntary," but it is not clear whether or not this is a correct description.

The system of collection is as follows: A citizen or business firm pays, for instance, £1,000 annually in income-tax. When he demands a receipt for this sum he is requested to pay an additional 10 per cent., which represents the "voluntary aviation tax." Until he pays this 10 per cent. the receipt for his income-tax payment is withheld.

Naturally this state of affairs is causing much unfavourable comment, and the foreign commercial secretaries have held a meeting to consider what steps, if any, should be taken in regard to the position in which their nationals may find themselves.

THE SCHNEIDER TROPHY COMPETITION.

It is reported that the seaplane race for the Schneider Trophy has been postponed from Oct. 24 to Nov. 11 owing to delay in the delivery of certain material for the Italian entries.

The competition will take place at Hampton Roads, Virginia. Only the United States and Italy have entered teams and both Italy and the United States have won it twice, the former in 1920 and 1921, and the latter in 1924 and 1925.

According to *Aviation*, New York, the Italian entry consists of three Macchi twin-float monoplane seaplanes, two fitted with Fiat engines and one with a Napier Lion engine. Rumour states that a speed of 243 m.p.h. has been reached by these machines on test.

The American entry will consist of the three Curtiss R.3C.2 seaplanes which took part in the race last year, when Lieut. J. H. Doolittle, U.S. Army Air Service, won the Trophy at a speed of 232.57 m.p.h.

LIEUT. H. J. NORTON, U.S.M.C.

Lieut. Harmon J. Norton, U.S. Marine Corps, one of the team chosen to represent America in the forthcoming Schneider Trophy Competition, was killed on Sept. 14 while making a practice flight on the 1923 Curtiss R.2.C.2. racing seaplane.

He was flying at a height of 2,000 feet when the machine went into a vertical dive and fell into six feet of water in the Potomac River.

LIEUT. C. K. BETTIS, A.C.

On Aug. 23, Lieut. Cyrus Bettis, U.S. Army Air Corps, while flying in company with two other pilots, from Philadelphia to Selfridge Field, crashed into a mountain side near Bellefonte, Pa., in a thick fog. He was badly injured, but managed to crawl six miles from the scene of the accident, where he was found and conveyed to hospital in Bellefonte.

Three days later he was transported by air to a Washington hospital, for specialised treatment, but meningitis set in and Mr. Bettis died on Aug. 31.

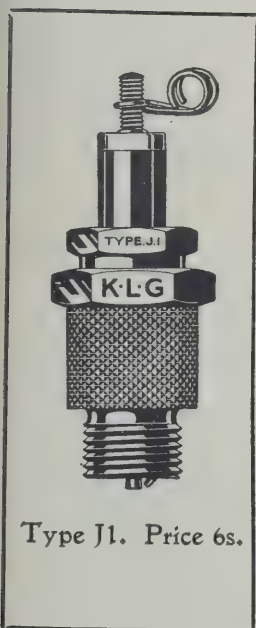
Cyrus Bettis saw service with the Mexican Border Patrol and later served two years in the Philippine Islands.

In 1924 he won the John L. Mitchell Trophy at the National Air Races, Dayton, Ohio, and in 1925 he won the Pulitzer Trophy at the National Air Races, Mitchell Field, L.I., at an average speed of 248.9 m.p.h.

In 1926 he and Lieut. Doolittle, the winner of the Schneider Trophy, were awarded jointly the Clarence Mackay Trophy for the most outstanding performance during 1925.

By the death of Lieut. Bettis, the U.S. Army Air Corps has lost one of its most brilliant pilots, and a valuable helper in aeronautical progress.—L. B.

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THE TESTING OF THE HERCULES.

On Friday last the first of the five de Havilland Hercules (triple-Jupiter) machines for the Cairo—Karachi Service, was tested at Stag Lane by Mr. Hubert Broad. The Hercules is the first three-engined machine ever produced by the de Havilland Design Staff. As the machine was only ordered early this year, it is something of a triumph in quick construction, despite the various strikes, to have completed it by this date.

Friday morning was spent in putting the finishing touches to the machine, such as making the engines start easily with the gas starter, and thoroughly testing the engines. At 4.30 in the afternoon everything was ready and as Mr. Broad took his seat in the pilot's cockpit, the Works hooter blew and all the de Havilland hands streamed out onto the aerodrome to watch the machine make its first flight.

Capt. Geoffrey de Havilland said that he was somewhat nervous in adopting this procedure as he had recollections of the testing of the Grahame-White Ganymede at Hendon. On this occasion, it may be remembered, there was an elaborate christening function by Miss Ethel Levey with all the Grahame-White staff on the aerodrome watching and praying. The machine then trundled forward across the ground onto which it slowly subsided, and never took the air at all.

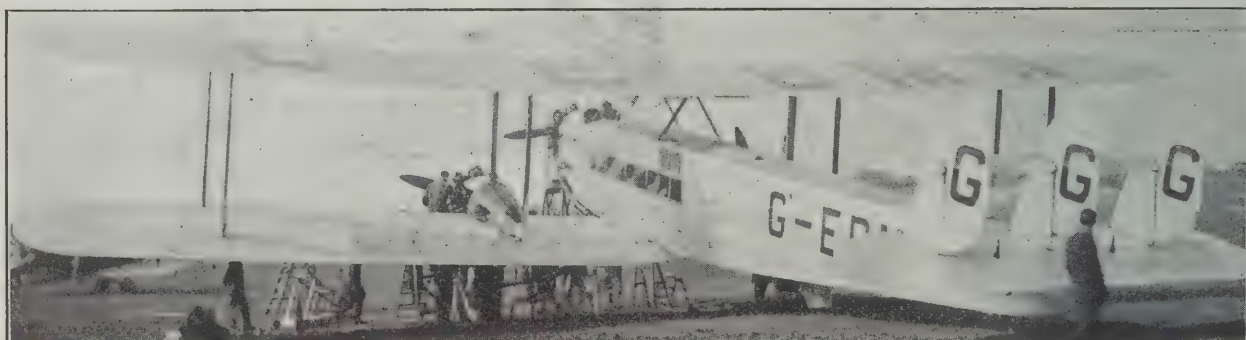
The de Havilland Hercules was, however, a very different proposition. The machine was, of course, quite light and only carried a hundred gallons of petrol. When Mr. Broad opened up the engines she got off the ground in her own length and climbed at a steep angle with plenty of speed. As she got off the ground all the hands cheered lustily and watched the machine floating round with interest.

Mr. Broad flew her on two engines for some of the time and then flew straight along the aerodrome without losing any height with two engines stopped. After flying round for ten minutes he brought her down with a very slow glide and landed without a bump, which was a signal for more cheering by the workers.

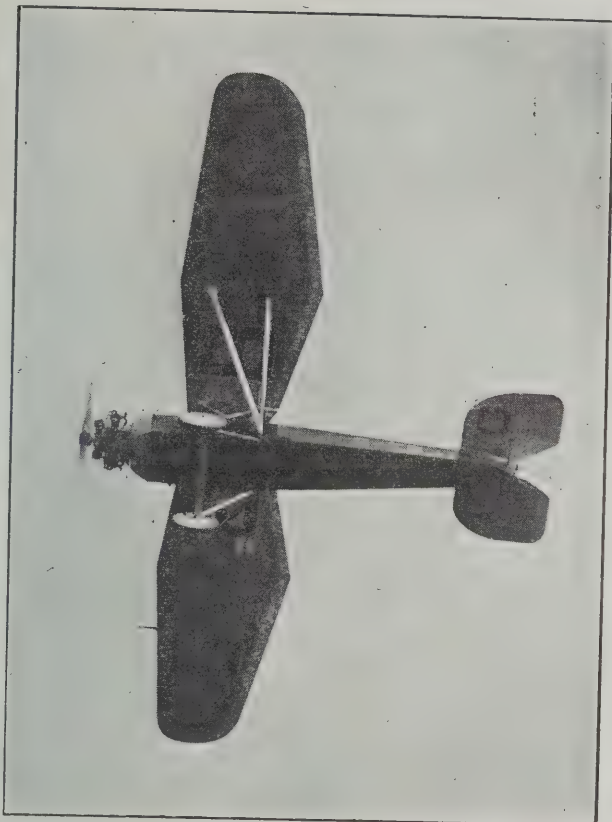
Mr. Broad found that the machine handled perfectly and there were no snags whatever. The following day the Hercules did quite a lot of flying piloted by Mr. Broad and Capt. Geoffrey de Havilland.

It is expected that she will be handed over to Imperial Airways in about a month's time and until Jan. 1 she will probably fly on the cross-Channel services. As the machine will not be sent to Martlesham, a great deal of time will be saved and a great deal more knowledge will be gained by those who will have to use the type.

The second Hercules is almost completed and the other three will be ready shortly.—G. D.



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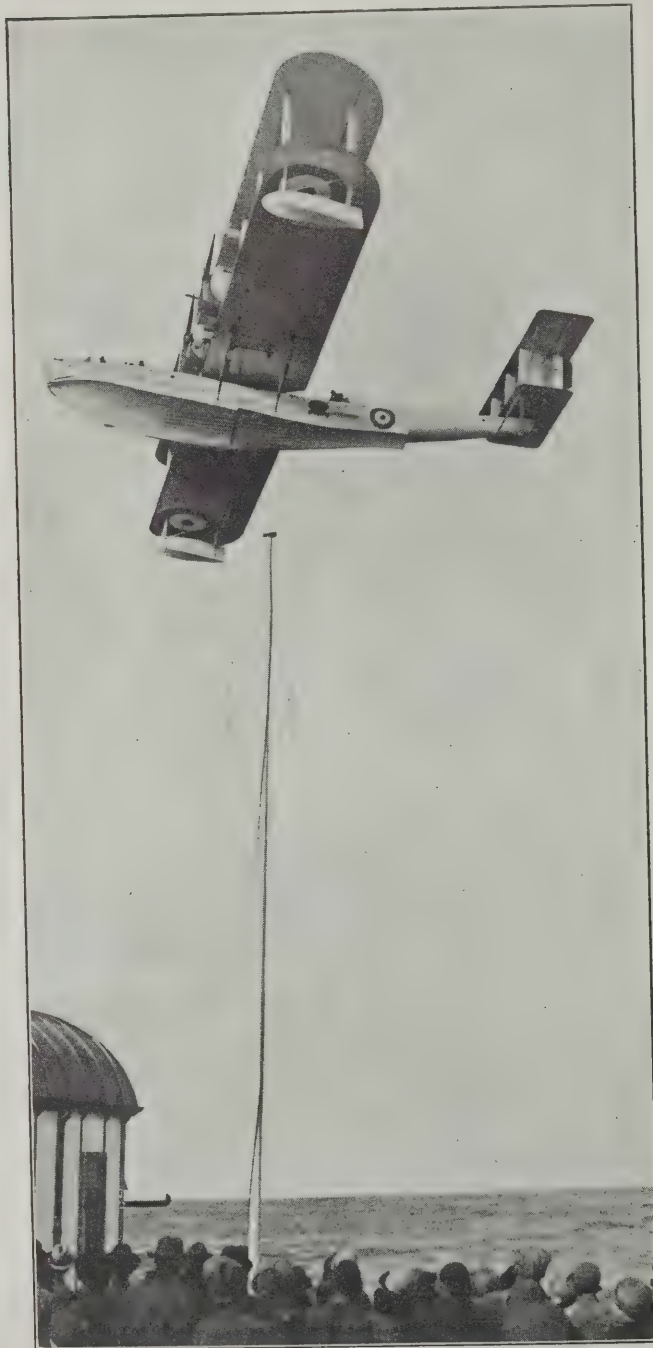
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THE BLACKBURN IRIS IN PUBLIC.

On Wednesday, Sept. 29, the Blackburn Iris flying-boat (three 650 h.p. Rolls-Royce Condor III engines) was seen in public for the first time off Cromer.

It was originally arranged that the machine should fly up from Felixstowe to Cromer and there be inspected by Sir Samuel Hoare, the Secretary of State for Air. Weather conditions permitting, Sir Samuel Hoare was to have gone on board and to have had a short flight. Unfortunately a stiff north-westerly breeze was blowing and this with a ground swell made it unwise to attempt to carry out the latter part of the programme.

It must not be imagined that the Iris could not have



OUR FASTEST SEAPLANE.—The Blackburn Iris (three Rolls-Royce Condor engines) flying at Cromer

alighted and got away again, but to attempt to go alongside in a small boat would have caused risks both to the Iris and the small boat and its occupants.

Punctually at 15.00 hours the Iris hove in sight and for over half an hour the pilot, Flt. Lt. H. G. Sawyer, A.F.C., flew up and down the front at heights varying from 200 to 10 feet and demonstrated the machine in a most convincing manner.

The pilot flew successively on the various combinations of his three engines. First he flew with his port engine stopped. Later he stopped his starboard engine and proceeded to fly in a circle against the "dead" engine. With any one of the three engines stopped the machine was able to gain height.

Finally with only the centre engine working the machine was able to go on flying with an almost inappreciable loss of height.

Other exhibitions of speed, climb and manoeuvrability showed the Iris to be very much in a class by herself.

Unfortunately the Iris is on the Air Ministry Part Publication List so that it is impossible to give any dimensions, or performance figures, or describe or illustrate anything other than that which can be observed from external-view photographs. The machine has already been illustrated in THE AEROPLANE and further illustrations of the machine in the air are published herewith.

The Iris has been designed for long range reconnaissance work with the Fleet, for submarine patrols and general escort work. She carries a crew of five,—1st pilot, 2nd pilot and navigator, W/T. operator and two engineer-gunners.

The existing Iris is of all-wood construction, but the hull has been reproduced in metal and this will be tested at a later date.

The load carried is unmentionable, but fuel is carried in three wing tanks sufficient for nine or ten hours' flying. The result of her performance trials shows that the estimated performance has been exceeded all round and in her class she is believed to be the fastest flying-boat in existence.

The Blackburn Aeroplane and Motor Co. Ltd., the constructors, Major J. D. Rennie, her designer, and Rolls-Royce Ltd., who are responsible for the Condor engines, are to be congratulated on the success of the Iris.

NIGHT-FLYING ADVERTISEMENTS.

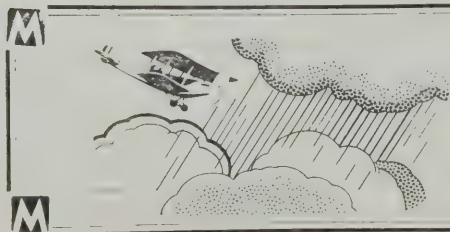
For a considerable time there have been various schemes afloat for the operation of aeroplanes at night carrying illuminated signs under the wings, for advertising purposes. One gathers that some experimental flights have been made with such aeroplanes and that fairly satisfactory results have been obtained. But not having seen such a machine oneself, one is not prepared to vouch for its effectiveness as an advertising medium.

Apparently the difficulties hitherto met in these experiments have been firstly that of discovering lamps which would stand up to the work and vibration, and secondly the difficulty of arranging the lamps so that they do not cause such an amount of head-resistance under the wings as to impede the machine seriously, or to make control difficult. One is told that these difficulties have been overcome, but, so far as can be discovered, no machine has yet flown with these latest developments.

A statement has been made that patents have been taken out for the use on such aeroplanes of variable lettering. Hitherto, the sole aim of the designers of such aircraft has been the fixing of the lamps to show one particular name. The later idea, which is a logical outcome of the changeable illuminated signs in street advertising, is to vary the lettering as the machine flies and thus enable the operators of the aeroplane to advertise several different commodities in the course of one flight.

This appears to be quite a simple problem after the production of the right sort of lamp and the suitable fitting of it. And, naturally, the weight of the apparatus, which involves carrying a large number of lamps, because one set must be idle while the rest are illuminated, must be considerable.

Therefore, if the various difficulties have been overcome, we shall doubtless have another terror added to the night life of our greater cities.



ALL WEATHER FLYING

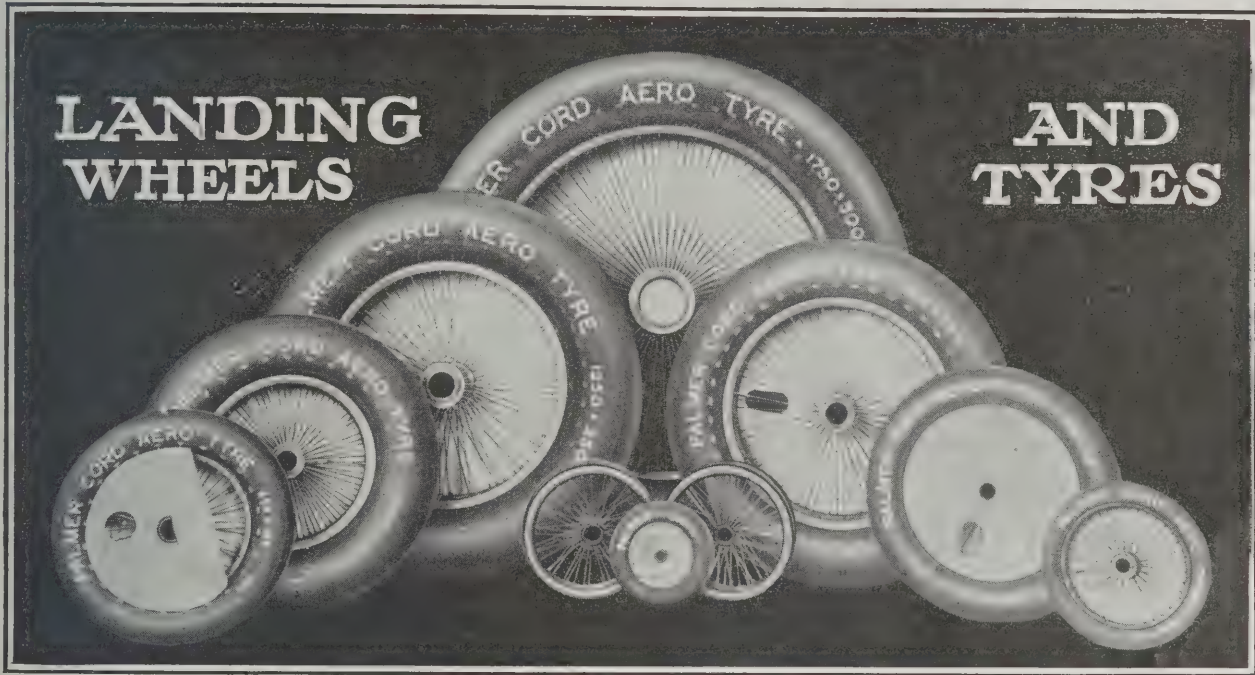
In low visibility the Marconi Direction Finder—installed on aircraft or at Ground Stations—is a valuable aid to navigation and makes for safety of flight.

Sir Samuel Hoare, the Air Minister, in an address at the Royal Aero Club said wireless was now of tremendous help to pilots working in weather which a few years ago would have been regarded as impossible for flying.

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| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|---------------|-------------|----------------|-----------|-----------|-------------|--------------|----------------|-----------|-----------|-------------|--------------|----------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375×55 | 168 | m/m 111.12 | m/m 25.4 | m/m Central | 700×100 | 112 | m/m 150. | m/m 38.09 | m/m Central | 1000×150 | 210 | m/m 185. | m/m 60.32 | m/m Central |
| 300×60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000×180 | 148 | 220. | 80. | Central |
| 450×60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650×125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575×60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900×230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750×125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650×65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100×220 | 134 | 220. | 66.67 | Central |
| 600×75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800×150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975×225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700×75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250×250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500×300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700×100 | 77 | 178. | 44.45 | 132/46 | 1000×150 | 167 | 185. | 55. | 125/60 | 1750×300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750×350 | 193 | 400. | 125. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 × 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FIRST FLIGHT FROM LAND'S END TO JOHN O' GROATS.

Colonel the Master of Sempill, flying a De Havilland Moth (85 h.p. Cirrus Mark II) left Land's End at 7.25 on Sept. 29 and landed at John o' Groats just after four o'clock, a total distance of 630 miles in 8 hours 14 minutes' flying time. He made one stop at Shotwick, near Chester.

Immediately after starting on the return flight on Sept. 30 he had to make a forced landing, owing to a punctured carburettor float, and the undercarriage and screw were damaged.

This is the first flight from Land's End to John o' Groats, and it is fitting that it should be done by an enterprising Scot.

On August 1 (Sunday) Col. Sempill, with his father, Lord Sempill, as passenger (not Mrs. Sempill, as reported at the time) flew from the family seat near Aberdeen to John o' Groats, and so took the honour of being the first aviator to land there. He now has the further honour of being the first to do the End-to-end journey by air.

The journey which took him 8½ hrs. by air takes 30 hours by train and the record trip by road is between 30 and 35 hours, by motor-cycle.

The machine he used was the red and white D.H. Moth G-EBMO, commonly known as Sir Charles Wakefield's Bath, which won the King's Cup, and is now fitted with the Mk. II Cirrus engine.

THE SECOND YORKSHIRE MEETING.

The second Flying Meeting of the Yorkshire Aeroplane Club held on Saturday, Oct. 2, was a success which very nearly compensated for the disappointment of the first meeting, which was spoiled by rain. Many thousands found their way to the excellent but out-of-the-way aerodrome at Sherburn-in-Elmet, and there were nearly a thousand motor vehicles in the enclosure.

Sir Sefton Brancker went to Leeds by train on Friday night in default of finding an aeroplane to take him there on Saturday morning. In a brief discourse he said that the Yorkshire Club had one of the finest aerodromes in the country, and he urged the Club to hold another meeting next year on a bigger scale, promising that he would try to get a number of the leading pilots to fly there.

He reminded the Club that the existing arrangements between the "approved" Clubs and the Air Ministry would end in July next, and said that the Air Ministry were investigating the figures for the Clubs in the matter of the number of members, charges for flying, amounts of subscriptions and so forth, and on these facts would make proposals to the Clubs to put them on a different basis. In the meantime the present scheme was justifying itself as they were getting the right type of man into the Clubs.

Apart from the actual racing some very good exhibition flying was done by Mr. Dudley Watt on the old Sopwith Grasshopper and on the Sopwith Swallow monoplane; by Mr. Norman Blackburn and Mr. Loton from the Blackburn School at Brough; and by Mrs. Lynn, who flew an S.E.; after damaging a wheel of a Moth in a forced landing on the way to Sherburn.

Particularly fine shows were put up by Sq. Ldr. Longton on the Blackburn Bluebird (Genet engine) on which he won the Grosvenor Cup Race at Lympne, and by Mr. Neville Stack, the Aerodrome Manager of the Lancashire Club, on one of the Club Moths. Sq. Ldr. Longton again showed that heavy bombers had not spoiled his hands for his pet pastime of crazy flying, and Mr. Stack equally demonstrated that the regular up-and-down routine work of instructing has not deteriorated his touch for the particularly brilliant aerobatic flying in which he was so expert before he took to instructing.

The prizes were pretty well distributed geographically. But the Newcastle Club, thanks to the brilliant flying of Doctor Dixon and Mr. Thompson, got rather more than their share.

Results:—

Inter-Club Members' Handicap Race to Selby and back.—H. B. Dixon (Newcastle); 2, M. B. Lax (Yorkshire); 3, D. H. Thompson (Newcastle).

Open Handicap Race, twenty-five mile course round Selby and Tadcaster.—Sq. Ldr. Longton (Blackburn Bluebird), scratch, time, 17 mins. 27 secs.; 2, Mrs. S. C. Elliott-Lynn (S.E.5), 5 mins. 24 secs., time, 18 mins., 38 secs.; 3, Dudley Watt (Sopwith Swallow), 5 mins. 12 secs., time, 18 mins. 49 secs.; 4, A. M. West (D.H. Moth).

Message Dropping Competition (fifteen points for a bull, ten for an inner, and five for an outer).—Yorkshire, Mr. R. Kenworthy (30 points); 2, Newcastle, Mr. Heppell (15); 3, Lancashire, Mr. Wilkinson (10).

Gladstone Trophy, machines to climb 2,000 ft., then glide down with engine throttled and land near a given mark (seven entrants).—Mr. M. Lacayo (Lancashire).

THE FLYING CLUBS.

The London Aeroplane Club.

The London Aeroplane Club broke all its previous records for flying time during the month of September. There were three blak days owing to bad weather and the total flying time during the month was 206 hrs. 15 mins., giving an average of over 7½ hrs. per day.

Report for week ending Oct. 3.

Total flying time 60 hrs. 10 mins.

The following members were given dual instruction:—Miss O'Brien, H. R. Presland, S. H. S. Carne, J. Barros, E. A. Lingard, O. H. Best, W. L. S. McLeod, M. P. Susman, E. K. Blyth, B. B. Tucker, L. C. Sykes, H. F. Wright, G. Lyon, P. O. A. Davison, J. S. M. Michie, A. J. Richardson, R. A. St. John, L. G. Crammond, G. N. Howe, G. Vlasto, F. C. Elford, T. H. O. Richardson, H. Solomon, V. H. Doree, Lady Bailey, R. L. Portway, R. Malcolm.

The following members flew solo:—J. Barros, Miss O'Brien,

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The following members had joy-rides:—S. S. Hope, S. O. Bradshaw, Miss Hay.

At the Manchester Pageant, organised by the Lancashire Aero Club, which was held at Woodford Aerodrome on Sept. 26, the Club was represented by Major K. M. Beaumont and Messrs. G. H. Craig, W. Hay and F. G. M. Sparks.

Mrs. Elliott-Lynn is now giving flying instruction and the first of her pupils to pass the tests for an Aviator's Certificate is Lieut. G. H. N. Larden, R.A. His tests were done on Tuesday, Sept. 28.

The Lancashire Aero Club.

Report for week ending Oct. 1.

Total time for week 29 hrs. 40 mins., made up as follows:—

Dual with Mr. Stack:—Birley 3 hrs. 50 mins., Fallon 1 hr. 10 mins., Gatterell 50 mins., Hope 55 mins., Shires 30 mins., Gerrard 45 mins., Nelson 30 mins., Costa 30 mins., Abdulla 25 mins., Smith 25 mins., Anderson 25 mins., Benson 10 mins., Honeyball 10 mins.

Dual with Mr. Cantrill:—Miss Brown 50 mins., Wood 30 mins.

Solo:—Costa 1 hr. 30 mins., Leete 1 hr. 25 mins., Goodfellow 35 mins., Agar 30 mins., Lacayo 25 mins., C. Agar 25 mins., Leeming 20 mins., Cantrill 10 mins., Williams 10 mins., Fallon 10 mins.

Joy-rides with Messrs. Stack, Scholes, Goodfellow, Leeming and Leete:—Warrington 35 mins., Miss Holman 30 mins., White 30 mins., Smith 30 mins., Leeming 20 mins., Pitman 15 mins.

Flying during the display 5 hrs. 5 mins. Tests 2 hrs.

Three more soloists have made their debuts, Messrs. Costa and Benson going solo just before the display and Mr. Fallon just after it.

With any reasonable luck the Club may now count on achieving its twentieth A Licence before the Philistines (in the shape of November fogs) be upon us. While admitting in the most frank and open manner that Mr. T. N. Stack is nobody's "inveterate rival," one may yet be permitted to offer him a gentle pat on the thoracic vertebrae in respect of his well-intentioned efforts in the way of turning out pilots.

Congratulations also to Mr. Mark Lacayo, one of the Club's first pupils, who followed up his success in the inter-Club members' race at Woodford by capturing the Gladstone trophy at the Yorkshire meeting last Saturday.

Will members please note that the Club will not be closed on the 6th, 7th and 8th as announced last week? It will re-open at 10 a.m. on Wednesday, the 6th, for flying as usual.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Sept. 26.

Dual instruction 5 hrs. 30 mins. Solo 13 hrs. 5 mins.

Total 18 hrs. 35 mins.

The following members flew under instruction with Mr. Parkinson:—Miss C. R. Leathart, Mrs. Marcks, Messrs. Irving, E. C. Kennedy, Somerville, Matthews, Shaw, Middleton, J. M. Kennedy, Turnbull, H. Ellis.

Solo:—Mr. Phillips with Mr. Whitfield and Mr. A. Bell as passengers. Mr. Forsyth Heppell with Mr. Herdman as passenger. Mr. N. S. Todd with Mr. W. Todd and Mr. R. N. Thompson. Dr. H. L. B. Dixon with Mr. Charlton and the Rev. Mr. Allatt. Mr. R. N. Thompson with Mr. Whitfield, Mr. Carr, Mr. N. S. Todd, Mr. H. Ellis.

LX left for Woodford on Saturday, so that on account of this and the absence of Mr. Parkinson only a small amount of flying took place at the aerodrome.

Report for week ending Oct. 3.

Dual instruction nil. Solo 7 hrs. 15 mins.

Both Moths were at Sherburn from Saturday until Sunday afternoon. LY was returned to service on the 1st and took part in the Yorkshire Club's meeting.

The following members flew:—Mr. Phillips with Messrs. H. Ellis and Carr, Mr. R. N. Thompson with Messrs. Whitfield and Ellis. Mr. N. S. Todd with Miss B. Thompson and Miss N. Turnbull. Mr. Forsyth Heppell and Dr. H. L. B. Dixon flew alone.

The Club is very pleased with the performance of its team in the Relay Race at Woodford. The Tankards did come to Newcastle after all.

The team was as follows, not as given in the programme and previous reports:—Mr. Forsyth Heppell, Mr. F. H. Phillips, Mr. N. S. Todd and Dr. H. L. B. Dixon.

Mr. N. S. Todd was placed second in the landing competition. Mr. Baxter Ellis was absent on holiday.

Dr. Dixon has collected another *ab initio* trophy, that from the Yorkshire Club's meeting, and all are pleased that Mr. R. N. Thompson obtained third place.

Mr. Phillips was second in the competition for the Captain Gladstone Trophy and Mr. Parkinson second in Bomb-Dropping.

Now that the Club has completed one year's operations and that the Flying Meetings are over for the year, the Club looks back with satisfaction upon the progress made.

The total amount of flying carried out is 1,160 hrs. Twelve members have obtained Licences and a further eight are in the final stages of training and seventeen have had a considerable amount of dual instruction and with continuity of practice will soon pass out. All flying has taken place on the two original Moths.

The following are the successes in the four Meetings attended:—Yorkshire Aero Club's Meeting (August).—Instructors' Race, Mr. J. D. Parkinson; Trophy presented by Mrs. R. W. Kenworthy and £20. Open Handicap, Mr. J. D. Parkinson; 2nd prize, £10.

Newcastle Meeting.—Instructors' Race, Mr. J. D. Parkinson; President's Cup and Prize (First). Inter-Club Members' Race, Dr. H. L. B. Dixon; Trophy presented by Mrs. De Lancey Willson.

Lancashire Club Meeting (September).—Team Race, team of four members; four Silver Tankards presented by Sawley Brown, Esq. Landing Competition, Mr. N. S. Todd; Silver Cigarette Box, 2nd prize, presented by Mr. John Lord.

Yorkshire Meeting (October).—Inter-Club Members' Race, Dr. H. L. B. Dixon; First, Silver Cup; Mr. R. N. Thompson, Third. Landing Competition, Mr. F. Howard Phillips; Second. Bombing, Mr. J. D. Parkinson; Second.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The Yorkshire Aeroplane Club.

Report for week ending Oct. 3.

Total flying time 12 hrs. 35 mins.

Total dual 7 hrs. 40 mins. Joy-rides 5 hrs. 5 min. Test 5 mins. Solo 1 hr. 15 mins.

The following members had dual instruction:—Miss Woodhead, Messrs. Dawsons (Senior and Junior), Hewitt, Armitage, Brauham, Fensiva and Leatham.

Messrs. Leatham, Norwal, Wood, Fensiva and Hewitt flew solo. We are now in a position to pass out some seven members for A Licences, having now obtained a barograph and made the necessary arrangements for the other requisite tests.

One must here record a moan, in the hope that members who read THE AEROPLANE will take it to heart, namely, that we must have a better attendance at the aerodrome.

Mr. West has 24 pupils who probably average half-an-hour a month each with the exception of some six very keen members, who include Mr. Dawson, Senior, and Mr. Dawson, Junior. These two members have an excellent piece of land adjoining their house and purpose buying an aeroplane of their own.

And now for our Pageant, which was really a continuation meeting of our last one, which was marred by a severe rainstorm. It may be described as a Northern Group meeting, for our very excellent friends, Lancashire and Newcastle, turned up in force, and the honours were evenly divided to everyone's satisfaction.

The first competition was Event No. 2, won by the gallant Dr. Dixon, of Newcastle, with Mr. Lax, of Yorkshire, a very good second.

In the Open Handicap the Blackburn Bluebird won in a canter, with Mrs. Elliott Lynn second and Mr. Dudley Watt third. One must here record one's sympathy with Mrs. Elliott Lynn in the damage caused to her machine in a forced landing.

Yorkshire scored a good win in the Message Dropping Competition by Mr. Reg. W. Kenworthy.

The trophy presented by Captain W. E. Gladstone for the Landing Competition, open to Club-trained members, was won by Mr. Lacayo, of Lancashire, who finished dead on the mark.

The evening and night, and in some cases the early hours of the next day, passed in usual pageant fashion.

The Midland Aero Club.

Report for week ending Oct. 2.

Total flying time 10 hrs. 38 mins.

The following members were given flying instruction:—E. R. King, J. Brinton, H. Beamish.

The following "A" pilots made solo flights:—H. Willis, W. Swann, R. L. Jackson, C. L. Knox, E. J. Brighton.

During the week E. R. King and J. Brinton made their first solo flights, which in each case were satisfactorily done.

Mr. Willis had a forced landing on the Austin Whippet on Sunday, but despite the small size of the field in which he landed no damage whatever was done.

The Hampshire Aeroplane Club.

Report for week ending Sept. 23.

Total flying time 23 hrs. 20 mins. Instruction flying 18 hrs. 45 mins. Passenger flying 2 hrs. 45 mins. Solo flying 1 hr. 40 mins.

The following members had instruction:—Messrs. Fry 3 hrs. 40 mins., Shepherd 2 hrs. 25 mins., Heathcote 1 hr. 15 mins., Rumble 1 hr. 10 mins., Nicholson 1 hr. 10 mins., Dobson 1 hr. Keeping 55 mins., Bowen 45 mins., Miss Home 45 mins., Messrs. Malony 40 mins., Fowler 30 mins., Dunning 20 mins., Bound 20 mins., Bishop 20 mins., Courtney 20 mins., Dickson 20 mins., Sommer 20 mins., Perfect 20 mins., Westbrook 20 mins., Kerry 15 mins., Stokes 15 mins., Southcliffe 25 mins., Cooper 20 mins., Burry 10 mins., Wing Cdr. Wyllie 25 mins., Lt. Musselwhite 10 mins.

The following members flew solo:—Messrs. K. L. P. Bowen 40 mins., O. E. Simmonds 25 mins., Lt. Musselwhite 30 mins., and Wing Cdr. Wyllie 5 mins.

On Tuesday last several members of the Club who hold commissions in the R.A.F. left Southampton in the troopship *Assaye* for the East, and the ship was escorted down Southampton Water by a flight of Fairey Foxes and some III.Ds and one of the Club Moths flown by Mr. Thomson.

The passenger in the Moth was Mrs. Boothman, whose husband was on board the *Assaye*, and as Mr. Thomson flew round the ship he received a rousing cheer from all on board.

Report for week ending Sept. 30.

Total flying time 14 hrs. 36 mins. Instruction flying 11 hrs. Passenger flying 1 hr. 46 mins. Solo flying 1 hr. 50 mins.

The following members received instruction:—Miss Home 2 hrs. 35 mins., Messrs. Perfect 70 mins., Dobson 45 mins., Shepherd 55 mins., Rumble 40 mins., Bishop 35 mins., Stokes 35 mins., Maloney 30 mins., Southcliffe 25 mins., Rodger 25 mins., Everett 25 mins., Courtney 20 mins., Dunning 20 mins., Chadwick 20 mins., Westbrook 18 mins., Fry 15 mins., Nicholson 15 mins., Bound 5 mins.

The following members received passenger flights:—Mrs. Dick, Master Waite, Mr. Laver, Mr. Hales, Mr. Key, Mrs. Fry, Lady Snagg.

The following members flew solo:—Mr. O. E. Simmonds 45 mins., Flt. Off. Clarkson 12 mins., Mr. K. R. L. Bowen 20 mins., Mr. Fry 20 mins.

FRENCH AIRCRAFT FOR GREECE.

A *Reuter* message from Athens in *The Times* of Sept. 18 states:—

The Commission appointed to study the needs of Greek aviation has placed an order for 25 aeroplanes with the Morane-Saulnier factory at Puteaux, France. The order has been placed abroad, as it is considered that the English Blackburn works at Phaleron are not yet in a position to supply all the country's requirements in the matter of aviation.

[Opinions differ. There is no doubt that the Greek Naval Aircraft Factory which has been organised and is being run by the Blackburn Co. will soon be in a state to supply all the aeroplanes which the Greek Services can possibly use. And, incidentally, the factory is Government property, it is not "the English Blackburn works."—C. C. C.]



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.**The London Terminal Aerodrome.****ANALYSIS OF FIGURES FOR THE PAST WEEK.**

Trips per Day.—Monday, 15; Tuesday, 13; Wednesday, 15; Thursday, 18, Friday, 16; Saturday, 13; Sunday, 5.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 49, passengers 371, freight 19 tons.

AIR UNION:

Paris—London: Machines 30, passengers 98, freight 12 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 12, passengers 47, freight 2½ tons

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 0, passengers 0.

PRIVATE:

Machines 4, passengers 20.

Total number of trips by British Machines, 51, carrying 375 passengers. Foreign Machines, 44, carrying 161 passengers.

Comparative Figures:

Week ending Oct. 3:

Machines, 95; Passengers, 536; Crews, 125; Total personnel, 661

Corresponding week, 1925:

Machines, 94; Passengers, 381; Crews, 122; Total personnel, 503.

Corresponding week, 1924:

Machines, 113; Passengers, 484; Crews, 142; Total personnel, 626.

Corresponding week, 1923:

Machines, 79; Passengers, 238; Crews, 108; Total personnel, 346

Corresponding week, 1922:

Machines, 98; Passengers, 330; Crews, 159; Total personnel, 489.

Corresponding week, 1921:

Machines, 75; Passengers, 227; Crews, 98; Total personnel, 325.

Corresponding week, 1920:

Machines, 131; Passengers, 222; Crews, 152; Total personnel, 374

Croydon Notes.

The Passenger traffic continues to be extremely heavy for the time of the year, especially on the Paris route. It is to be hoped that the accident to the French Bleriot at Hildenborough will not cause any serious slackening of passenger-booking.

Shortly after midday on Wednesday Croydon was startled by a curious apparition. This proved to be a Caproni 73 which had left Italy a night or two before and found that it really was Wednesday over here. The pilot was Colonel Falchi and the passengers were the hosts at the lunch given by Mr. Clifford B. Harmon for the International League of Aviators. The machine flew back on Thursday.

There was a certain amount of activity in connection with the arrival of Mr. Cobham, about which some paragraphs have appeared in the daily press. *The Daily Mail* and *The Daily Sketch* hired the Hampstead and Mr. O. P. Jones to go to Paris to fetch photographs of Mr. Cobham's arrival there. *The Daily Mirror* hired Mr. Dudley Travers and his D.H.9 to go to Paris and photograph Mr. Cobham's start on Friday morning and to photograph him in various attitudes on his way across. Why they should want to go to all this expense one does not know, but they did.

Apparently there is desperate rivalry between *The Daily Mail* and *The Daily Sketch* on the one hand and *The Daily Mirror* on the other, which is amusing, because they are all owned by the Lord Rothermere.

The Daily Mail and *Sketch* were afraid that *The Daily Mirror* would try and smuggle photographs onto their Hampstead, and so the most elaborate searches of both pilot and machine were made by *Daily Mail* henchmen at Le Bourget and Croydon without result.

While on the subject of *The Daily Mirror*, it seems that that paper has been guilty of a most unpatriotic action. Pip, Squeak and Wilfred are to start this week on a flight round the World and Uncle Dick has arranged for them to go in a French aeroplane, with a French pilot, M. Bonbonnière. Surely for reasons of safety and patriotism, they should travel by a British machine.

Apparently Uncle Dick is one of those persons who still labour under the delusion that the French are the leading aviators of the World.

It may be recalled that when Mr. MacMillan, Major Wilfred T. Blake and Col. Broome made an unsuccessful attempt to fly round the World some years ago, their adventures were chronicled and depicted in *THE AEROPLANE* at the time, as the "Adventures of Mac, Broome, and Wilfred." At the Wakefield lunch on Monday Major Blake seemed highly amused when one informed him that the real pets were now to attempt the flight.—G. D.

THE AIR UNION ACCIDENT.

On Saturday afternoon, a Bleriot 155 (four Renaults) piloted by M. Mallet with a mechanic and five British passengers, caught fire in the air while flying over Tonbridge en route for Croydon. The machine was practically destroyed in the air and fell into a field near Hildenborough station and everyone on board was killed.

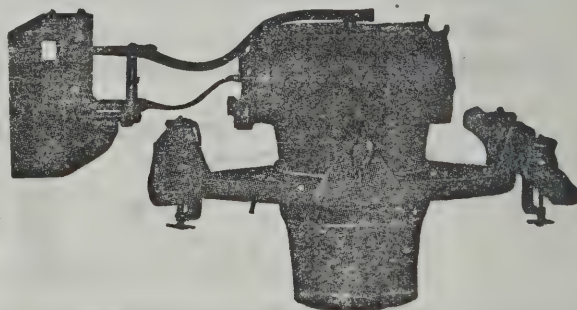
There are many theories as to how the fire occurred, and

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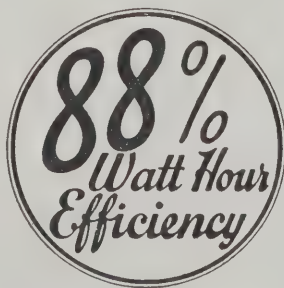
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T.M.74

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there is to be an official inquiry. The Bleriot 155 is fitted with ripping panels to the petrol tanks, and it seems possible that the sudden spreading of the fire was due to the pilot ripping the tanks when a fire had already started in one of the engines.

The following telegram of condolence has been sent by Sir Samuel Hoare, Secretary of State for Air, to the Air Union:—

Deeply grieved to learn of most regrettable accident to one of your machines on Saturday. Please convey expression of my profound sympathy to relatives of victims.

PERSONAL NOTICES.

MARRIAGES.

KENNARD-TRAVERS.—On Sept. 30, at the Church of St. Michael and All Saints, Paddington, Edmund Kennard to Hilda Nancy, widow of Wing Cdr. J. L. Travers, R.A.F.

OMMANNEY-WILLIAMS.—On Oct. 2, at St. Luke's, Redcliffe Square, Montagu Douglas Ommannney, R.A.F., second son of D. G. Ommannney, Esq., D.I.C., Indian Police, Karachi, to Phyllis, daughter of the late Mr. and Mrs. S. Williams.

TODD-LITTLE.—At Benwell, on Sept. 30, Norman Storey (New castle Aero Club and late R.A.F.), second son of Mr. and Mrs. Thos. Todd, of Newcastle, to Jemima, youngest daughter of the late Mr. and Mrs. Thos. Little, of Newcastle.

VOSPER-LIDDELOW.—In August, quietly, in London, Flt. Lt. Roy A. Vosper, R.A.F., to Kathleen Iris Liddelow, youngest daughter of Mr. and Mrs. Liddelow, of Errol Park, Trinidad, B.W.I.

BIRTHS.

ALCHIN.—On Sept. 28, to Sylvia (*née* Wrensted), wife of Gordon Alchin (late R.A.F.), of the Middle Temple—a daughter.

COMPSTON.—On Sept. 29, to Nina, wife of Robert John Orton Compston, D.S.C., D.F.C. (late R.A.F.), of St. John's Avenue, Thorner, Leeds—a son.

HAVERS.—On Oct. 2, at Coombe Lodge, Ascot, to Sq. Ldr. and Mrs. E. W. Havers—the gift of a son.

MAXWELL.—On Sept. 27, at 2, York Terrace, London, to Carrie, wife of Major Gerald Constable Maxwell, M.C., D.F.C., A.F.C.—a son.

SULLOCK.—At Rose Mount, Oxtou, Birkenhead, to Irene (*née* Smallwood), wife of Edward A. Sullock, A.F.C., R.A.F.—a daughter.

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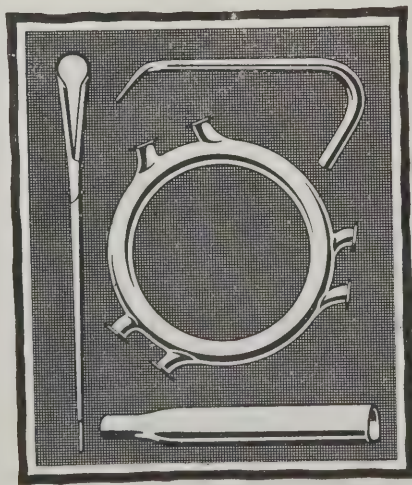
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OCT. 13,
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ON A FEW PRACTICAL POINTS.

Having progressed from the parish politics of light aeroplanes to Imperial air ways, and from Imperial air ways to the consideration of an International League of Aviators, during the past three weeks, not to mention the return of "London's Own Airman," one proposes for a change to discuss a few little practical points which may be of interest to people who merely fly and are not particularly interested in politics of any kind or in the boosting of any particular flight. There are lots of things about aeroplanes which need improving before flying becomes safe and comfortable. Some of them will have been discussed at the Inaugural Meeting of the Institution of Aeronautical Engineers before these notes appear in print, for Mr. Bramson is to read a Paper on "Unsolved Aeronautical Problems" on the Tuesday night on which this issue of THE AEROPLANE goes to Press. And Colonel the Master of Sempill read on Friday night at the Inaugural Meeting of the Royal Aeronautical Society a Paper on "Fuel Problems," which matter concerns the safety and comfort of flying.

Both these distinguished aviators have concerned themselves with problems of much greater magnitude than those to which one desires to direct the attention of one's readers. Yet the solution of the simple problems which one will now proceed to discuss would go a long way towards making flying popular, and so would help to put money in all our pockets.

NOISE.

Apart from the danger of flying, undoubtedly one of the things which puts people off travelling by air is the amount of noise which an aeroplane makes.

Noise is a thing about which probably less is understood than almost anything else in this World which is of equal importance. Those scientists who pride themselves on know-

ing something about the Science of Acoustics are if anything more ignorant on practical matters to do with their own science than are scientists of any other species. And that is saying a great deal.

As usual the practical men know the most. The people who build the H.M.V. Gramophones know a lot more than do the scientists who try to cure the echo in the Albert Hall.

Certain facts are known about noise, using the word noise in its widest sense as did the humorist who defined music as the most expensive form of noise.

For example, anybody who lives in a top-floor flat knows that the sound of a dog barking or of a boy whistling will penetrate all over the place even though the street may be full of motor-buses in full blast at the same time, while on the ground floor the noise of motor-buses will drown everything, and the whistling and barking will be unheard. And fifty years ago balloonists reported that at a height of some thousands of feet over a big city they could hear whistling and barking though they could not hear the rumble of traffic.

Anybody who drives one car habitually, and presumably anybody who drives one aeroplane habitually, can not only hear but can locate the direction of quite a small noise in the engine or in the machine in spite of the regular roar of the engine. People know these things, but none of the acoustic scientists have explained them.

Some people have schemes which work for insulating noise. For example, some telephone boxes are almost sound-proof. And one is told that the cabin of the new D.H.66, which consists practically of a wooden box inside a steel tube fuselage the outside of which is covered by fabric in the ordinary way, so that there is a space of dead air in between the wood and the fabric, is almost quiet. At any rate, it is said that with the three Bristol Jupiter engines going full power, it is



LANCASHIRE ENTERPRISE.—A snapshot of a corner of the Woodford Aerodrome during the Lancashire Aero Club's Display on Sept. 26.

not only possible to carry on a conversation comfortably in the cabin but it is actually possible to make oneself heard from one end of the cabin to the other by shouting. So evidently there is a good deal to be said for insulation as a means of producing peace and quietness for the passengers of an aeroplane. But mere insulation does not abolish the noise.

SILENCING AEROPLANES.

Every now and then paragraphs appear in the Press announcing as a great discovery that somebody has invented a silencer which will abolish the noise of aero-engines and so make aeroplanes so quiet that not only will the passengers be relieved from the noise, but the machine will be unheard from the ground—which would be a distinct advantage, either in peace or war, but especially in war.

Now there is no more difficulty actually in making an aeroplane engine silent, so far as exhaust noises are concerned, than there is in making a motor-car engine silent. Quite a number of different inventors of silencers have proved conclusively that their silencers do not decrease the power of an engine, and some have proved that on certain car engines the power has actually been increased by fitting a silencer.

The only objection to silencers on aeroplanes is the extra weight. And for ordinary commercial machines the advantage of having a quiet engine compensates for a slight loss of load.

SLIPSTREAM NOISE.

As a matter of fact one does not believe that the noise of the engine exhaust has a great deal to do with the noise in the cabin of the machine itself. The exhaust is probably the noise which is most heard by people on the ground, because it is probably of a quality which travels furthest or fastest through the air. But one is fairly sure that what makes most of the noise in the machine itself is the slipstream from the airscrews banging against obstacles, such as the leading edges of the wings and the slab sides of the body in single-engined tractor machines, and against the struts and the engine mountings and the surfaces of the planes in twin-engined machines.

You cannot take a huge cylinder of air travelling at high speed and revolving at the same time and break it in a dozen places without the air setting up a song about it.

One has been told by a designer whose opinions on practical points have generally proved to be correct that the slipstream on an ordinary two-seater at about 120 miles an hour makes something over one complete turn in the length of the fuselage. If that be so it means that every flat surface on the machine within the radius of the airscrew gets a pretty good jolt from each blade of the screw at each revolution.

All the struts and all the surfaces of the machine are streamlined for a straight fore-and-aft stream. Consequently they present beautifully flat, unstreamlined surfaces to a rotating stream.

ENGINE NOISE.

Also a good deal of the noise comes from the vibration of the engine itself. If you put an engine on a solid steel test-bed in a workshop and fit it with the most perfect possible silencers, it still makes a considerable row inside the shop itself. And when you put that engine on a flexible mounting in the middle of that palpitating jelly which we call an aeroplane it is naturally going to make a lot more noise, at any rate for the people sitting inside the afore-said jelly.

For the same reason the internal noises in the engine, such as the slap of the valves and the grinding of gears, is enormously exaggerated when transmitted from the engine-bearers into the body structure.

DRUMMING.

The whole problem is very like the problem of "drumming" in motor-car bodies. There are certain cars which with certain closed bodies and even certain types of hoods, drum horribly. Quite a slight alteration in the shape of the body or the hood will sometimes stop the drumming, and the same car may not drum with a body of a different shape, and the same body may not drum on a different chassis.

There are certain taxis on the London streets which have one particular engine speed, which happens to be their best travelling speed, at which the drumming is guaranteed to reduce the inmates to an unconscious pulp if maintained for about a quarter of an hour. Even in a run of about two or three minutes along an open stretch like the Thames Embankment one begins to feel the effect of it. And the curious thing about it is that it is not unpleasant—in fact it is rather the contrary, something like an anæsthetic.

Apparently a lot of this problem of silencing aeroplanes is connected with drumming rather than with actual exhaust noises, and much of it is actually a question of syntonistic vibration.

One noticed some time ago that the all-metal Dornier Komet, although it drums to a certain extent, is actually quieter than some of our machines with fabric sides. And curiously enough, although the machine is made completely of metal, the sounds from the engine are much less metallic than they are in some wooden machines.

INSIDE AND OUTSIDE NOISE.

Another thing to remember is that the noise of an aeroplane inside the cabin is completely divorced from the noise of the aeroplane in the air when heard from the ground.

An aeroplane with long exhaust-pipes all along the fuselage such as the D.H.50 or the D.H.34 seems very quiet when one hears it from the ground and the machine is at a height of 2,000 or 3,000 feet. But as the pipes are attached to the longerons of the fuselage they themselves must cause a certain amount of drumming inside the fuselage.

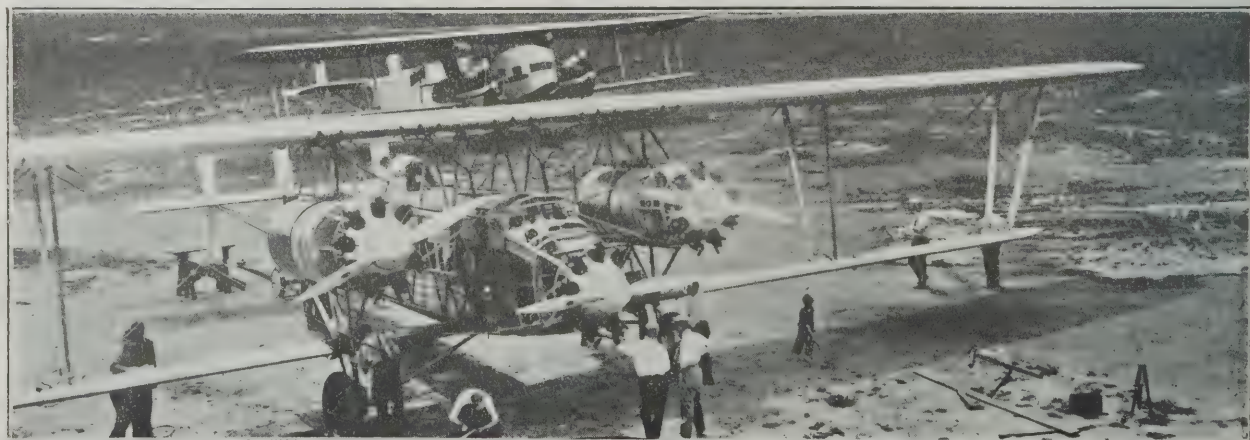
If the exhausts were taken up a short chimney over the top of the upper plane as they used to be in certain German war machines that exhaust might make a terrible row when heard from the ground and yet diminish the amount of noise heard in the cabin. But on the other hand the slipstream of the airscrew hitting a large streamlined exhaust pipe on the side might cause increased vibration inside the machine and so cause more noise, though of a different kind.

Taking the problem all round one believes that most of the noise which is so objectionable inside the cabin of an aeroplane does come from the rotating slipstream slapping against the surfaces of struts and planes and fuselages. The cure for this seems to be to abolish tractor screws and to use pushers, the slipstreams of which do not hit anything.

THE PUSHER PROBLEM.

That again introduces fresh problems. Unless the screws are going to be driven by enormously long shafts it means that the engines have got to be mounted on the back spars of the wings. And to balance them the cabin and passengers and goods have got to be further forward, thus splitting up the weights and increasing the longitudinal moment of inertia of the machine whereas at present the weights are pretty well massed along the thwartships line of the centre of pressure—or transverse axis, as our pseudo-scientists call it.

If ever we reach the stage of having the central engine-room, so beloved by sensational journalists who design mammoth air liners in their imagination, and if we can produce a light and efficient indirect drive, then we can have our airscrews behind the trailing edges of the wings driven by shafts from the central engine-room. But one fears that many years will



A BIG NOISE.—The unfortunate Sikorski biplane, which in spite of having three French-built Jupiter engines, abolished itself before leaving the ground when starting to fly the Atlantic.

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pass before anybody produces a system of drive light and efficient enough to pay for itself.

Anyhow, if we are ever going to have quiet aeroplanes, we have got to get away from the tractor airscrew. And when we do that we shall probably find that our machines are very much more efficient, for we must waste an enormous amount of power in splitting up the slipstream all over the machine as we do.

Noise is only produced by expenditure of power, and though of course noise can be stifled or choked or muffled so that people imagine it does not exist, whenever noise does exist it means that power is being wasted in producing it. That is to say, an airscrew which was 100 per cent. efficient and was allowed to operate free of all obstacles would be absolutely noiseless.

A PLACE FOR PROPELLORS.

One way of getting over the propeller-screw problem is suggested by the shape of the Hill Tail-less Pterodactyl. In that machine the right place for the engine evidently is at the back of the body, which becomes a "nacelle," as in the pre-war pusher types, instead of a "fuselage." For the matter of that in these days we might just as well call either type of bodywork simply a "body," now that we have got away from the idea that the French are before all other nations in the design and use of aircraft.

If it be permissible in the eyes of our Airworthiness Officials to put the engine at the back of the body in a pterodactyl and to have the airscrew whirling round between the wings in such a position that if it bursts it has a very good chance of chopping one or other or both of the wings to pieces, then it ought to be equally permissible in any big machine, such as the Argosy or the D.H.66, which has a big gap between the wings, to mount the engine between the spars and to have the airscrews revolving just behind the rear spar and actually between the upper and lower trailing edges, which would not interfere with the slipstream because the said trailing edges would be above and below it.

The third engine might then be mounted above the centre section of the upper plane. That is to say, much as the third engine is mounted on the top of Mr. Koolhoven's three-engined P.K.33.

Or something might be done in the way of a twin-bodied machine like the old war-time German "two-tails." In such a machine three engines might be arranged one between the two bodies and one on each side, all three of them being between the upper and lower trailing edges.

After all, there is very little extra risk in putting the airscrews between the trailing edges, for even a tractor screw if it bursts may boomerang back and cut into a leading edge or a front spar, as one did on one of the Imperial Airways machines some few months ago, happily without causing an accident. And as the airworthiness people at the Air Ministry will pass the pterodactyl as airworthy with the screw revolving between the wings, they could not very well refuse to pass a machine with the screws between the trailing edges.

A USE FOR THE PTERODACTYL.

Personally, so far as the pterodactyl is concerned, one still has to be convinced that it does anything which cannot be done by an aeroplane of normal shape, or that it has any particular advantage over an aeroplane of normal shape. But where it does seem to have possibilities is as a flying-boat.

THE INAUGURAL MEETING OF THE ROYAL AERONAUTICAL SOCIETY.

The 1926-27 season of the Royal Aeronautical Society was inaugurated on Oct. 7 by Col. The Master of Sempill, A.F.C., the new Chairman of the Society, at the rooms of the Royal Society of Arts, when he read a paper entitled "Aero-engine Fuels of To-day and To-morrow." The title suggests prophecy, but, although the needs of the future are kept in sight throughout, the paper is in essence a singularly comprehensive account of the fuels of to-day—their origin, methods of production, and qualities.

To those who regard petrol as merely a curiously-scented fluid which may or may not suit their particular engine and carburettor conditions, according to its particular label, the paper will give a very much more extended idea of how complex a mystery petrol really is, and how many differing qualities go to make up its suitability for particular conditions.

In addition to fuels proper, Col. Sempill gave same account of the curious compounds (tetra-ethyl-lead, and so forth) known as "dopes."

The paper is long, and thoroughly interesting, and all those who are in the least interested in petrol engines will find it worth reading, when published in the Journal of the Society.

The second lecture of the season will be held on Oct. 21 at 6.30 p.m., at the Royal Society of Arts, 18, John Street, Adelphi, W.C.2, when Mr. W. R. D. Jones, M.Sc., will read a paper entitled "Notes on Magnesium and Some of its Alloys." Col. the Master of Sempill will take the Chair.

It looks like a nice easy way of doing away with the after part of the hull of the flying boat which is really only there to carry the tail. The wing-tip rudders of the pterodactyl might, one imagines, be made comparatively easily into wing-tip floats so that the boat would have an absolute three-point suspension on the water.

One has an instinctive dislike of back-swept wings. They always appear to one as inevitably setting up awkward twisting strains in their own spars and internal structure. But apparently they stand up to the work, so presumably they are good enough. But they must surely be a good deal heavier than wings with parallel spars.

STARTING DEVICES.

Another of the little problems which we do not seem to have tackled seriously in this country is that of starting mechanisms for an aeroplane.

The Hucks-Ford starter is a boon and a blessing to Service and civilian mechanics who have torn their muscles and their internal economies to pieces swinging the airscrews of big engines. And even in the recent Light Aeroplane Competitions some people got rather tired of swinging small engines.

Incidentally some people seem to have missed the delightful story of that official of the Royal Aero Club who, when he was asked whether a Hucks-Ford starter might be used by a certain machine in the Competition, replied that certainly it could be used if it were carried in the machine throughout the Competition.

But, useful as the Hucks-Ford starter is on an aerodrome, we really do need something which lives inside the machine itself. Electric starters are a great deal too heavy, compressed air starters generally run out of compressed air before they start the engine, and though the Bristol gas starter is a very efficacious little engine it is not altogether good to have an engine running inside the body of an aeroplane. And, besides, it weighs quite a good deal.

The Americans have got a very nice thing which they call an inertia starter. And so far as one can discover it has never been used in this country.

Roughly, it consists of a very light fly-wheel of rather large diameter which is driven through a very much geared-up handle. The man who is going to start the engine turns the handle very slowly, which is all he is able to do, for the action is very much like starting up a cream separator. Then, as the flywheel gets going, he is able to wind faster and faster till the flywheel is running at some tens of thousands of revolutions a minute and has an enormous amount of energy stored up in it.

When he thinks that it is going fast enough he releases a friction clutch which engages the flywheel to the engine shaft. One gathers that about two minutes' hard but steady winding will fetch a Liberty or Curtiss engine round about half-a-dozen turns, which is a considerable improvement on yanking at an airscrew blade with one's hands.

Apparently these impulse starters can either be fitted inside the cowling of the machine as an integral part of the machine or can be used outside it on a kind of hand trolley.

One presents these few points to people who are interested in the practical side of aviation and hopes that they may provide subject for discussion and possibly lead to practical results.—C. G. G.

MILITARY EDUCATION.

The first of the series of lectures entitled "Ten Years Ago," by Major W. E. de B. Whittaker, dealing with the military operations of 1916 was given at King's College on Oct. 11.

Major Whittaker gave an outline of the various phases of war which led up to the British offensive on the Somme and described the intensive preparations which were carried out during the six months which preceded the operations.

He pointed out the grave results which arose from sacrificing the demands of the Royal Engineers for transport of road metal to the demands of the Artillery for transport of ammunition. When the ammunition arrived at the railhead the roads thence to the front line were impassable except for pack transport. And one horse could only carry two rounds of field-gun ammunition so bad was the going.

In his description of the actual battle on a fifteen-mile front on July 1, Major Whittaker laid particular stress on the numerical superiority of the British forces over their opponents. On one sector alone two German battalions were opposed by four British Brigades.

In reply to a number of inquiries which have reached the office of THE AEROPLANE, no tickets are required for these lectures, which begin at 17.30 hrs.

The second lecture, which will deal with the first use of the tanks and the effect of mechanical warfare, will be given on Oct. 18; and the third, which will deal with political factors, statesmen and soldiers, and the general depression of all belligerents, will be given on Oct. 25.



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MIDDLESEX

KINDLY MENTION "THE AEROPLANE," WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

GENERAL DUTIES BRANCH.—Group Capt. A. B. Burdett, D.S.O., is appointed Deputy Director of Organisation, Air Ministry, vice Group Capt. R. P. Mills, M.C., A.F.C. (Sept. 21).

The following Flg. Offs. are granted perm. comms. in this rank:—A. A. Jones (Aug. 1); D. S. Brookes, J. W. Colquhoun, H. I. Cozens, A. F. Hutton, R. O. Jones, J. B. Lynch, O. R. Pigott (Lt., R.A., T.A.), P. Slocombe, L. Young (Sept. 18). F. L. Collinson (Lt., 4th Essex Regt.) is granted a S.S. comm. as a Flg. Off. with effect from and with seniority of Sept. 6.

The following Plt. Offs. are promoted to the rank of Flg. Off.:—J. C. C. Slater (Mar. 12); W. E. Rimmer, E. B. C. Groner (May 15); E. J. Ellis, J. A. E. Inkster, G. M. E. Shaw (Aug. 6); V. J. Sofiano (Sept. 6); J. C. Noel, L. F. T. Price (Sept. 17). The following Plt. Offs. on probation are confirmed in rank (Sept. 13):—W. I. N. Strong, J. Constable-Roberts, J. W. Duggan, I. J. Fitch, H. P. Hudson, R. J. Legg, A. A. Leslie, N. McLeod, R. R. Nash, R. G. Pace, N. C. Pleasance, N. C. Ross-Roberts, G. H. Shaw, S. R. Sherman, L. R. Stokes, C. A. V. Tyson, E. F. Wain, E. C. Foreman.

Flg. Off. S. H. Hardy is restored to full pay from half-pay (Sept. 20); Flt. Lt. F. Beaumont is placed on half-pay, Scale B, from Sept. 1 to 30 inclusive; Flg. Off. R. D. V. Howard is transferred to the Reserve, Class A (Oct. 5); Flt. Lt. D. S. Jillings, M.C., is placed on the retired list at his own request (Oct. 1). The following Lts., R.N., Flg. Offs., R.A.F., relinquish their temp. comms. on return to Naval duty:—H. E. Guerrier (Sept. 28); E. A. A. Gibbon (Oct. 1).

STORES BRANCH.—Flg. Off. B. E. Essex is granted a perm. comm. in this rank with effect from Nov. 24, 1925, on completion of probationary service.

The following are transferred to the Stores Branch on probation as Flg. Offs. with effect from and with seniority of Oct. 1:—Flt. Lt. L. V. Hirst. Flg. Offs.—J. R. R. Harvey, M.M., L. W. Park, J. W. Hustwaite, M.B.E., M. F. Tomkins, J. W. Mitchell. Flg. Off. J. C. Daniels is transferred to the Reserve, Class C (Oct. 1).

ACCOUNTANT BRANCH.—Plt. Off. on probation R. J. Wislade is confirmed in rank and is promoted to the rank of Flg. Off. (Aug. 10). The following Flg. Offs. are transferred to the Reserve, Class C:—J. P. A. Fulton (Oct. 1); H. Hedderwick (Oct. 1); H. C. Roberts (Oct. 6).

MEDICAL BRANCH.—Flg. Off. G. J. Hanly, M.B., is granted a perm. comm. in this rank (Oct. 6); Flg. Off. R. F. G. Dickson relinquishes his S.S. comm. on account of ill-health (Sept. 22).

RESERVE OF AIR FORCE OFFICERS.—C. E. F. Sayer is granted a comm. in Class A.A., General Duties Branch, as a Plt. Off. on probation (Sept. 20). The following Plt. Offs. are confirmed in rank (Sept. 30):—A. W. Lindsay, H. Wood. Flg. Off. A. E. Francis is transferred from Class A to Class C (Oct. 5). The following Flt. Lts. are transferred from Class D2 to Class D1:—J. C. Smyth (Aug. 26); O. St. L. Campion (Oct. 3). Plt. Off. C. T. G. R. Miller resigns his comm. (Oct. 5). The comm. of Plt. Off. on probation P. D. V. Hackett is terminated on cessation of duty (Aug. 31).

Appointments.

GENERAL DUTIES BRANCH.—Wing Commanders W. H. Primrose, D.F.C., to Air Ministry, for Technical Staff duties, 21/9. V. S. Brown, to Station H.Q., Upavon, to command, 6/9.

Squadron Leader R. G. Parry, D.S.O., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 1/10.

Flight Lieutenants G. F. Smylie, D.S.C., and H. I. T. Beardsworth, to R.A.F. Depot, Uxbridge, 12/10. A. F. James, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 13/10. C. J. Brockbank, M.B.E., to Air Ministry Directorate of Equipment, 30/9. F. M. F. West, V.C., M.C., and W. G. Meggitt, M.C., to Station H.Q., Upavon, 6/9. T. M. Williams, M.C., D.F.C., to No. 402 Flight, Mediterranean, 1/10. N. Comper, to M.A.E.E., Felixstowe, 30/10. M. Moore, O.B.E., to R.A.F. Depot, Uxbridge, 25/9. O. W. de Putron, to R.A.F. Depot, Uxbridge, instead of to No. 99 Sqdn., as previously notified, 12/8.

Flying Officers L. W. Beck, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 9/7. E. D. Cummings, D.F.C., to No. 440 Flight, Mediterranean, 1/10. A. H. J. Howlett, to No. 460 Flight, Mediterranean, 1/10. E. S. Osborn, to No. 9 Sqdn., Manston, 29/10. A. M. Webster, to No. 1 F.T.S., Netheravon, 12/10. H. P. Morris, to No. 24 Sqdn., Kenley, 18/10. F. E. Vernon, to R.A.F. Depot, Uxbridge, 12/10. J. A. Mollinson, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/9. J. H. C. Wake, to R.A.F. Depot, Uxbridge, 5/10. G. W. R. Russell, to No. 28 Sqdn., India, 10/9.

Pilot Officers G. P. Butcher, to No. 27 Sqdn., India, 10/9. E. J. Ellis, to No. 28 Sqdn., India, 1/7. C. R. McEvoy, to Electrical and Wireless School, Flowerdown, 27/9.

MEDICAL BRANCH.—Group Captain C. E. C. Stanford, D.S.C., M.B., B.Sc., to H.Q., Iraq, pending disposal, 21/9.

Flight Lieutenant R. S. Topham, M.B., D.Ph., D.M.R.E., to R.A.F. Hospital, Halton, 1/11. Flight Lieutenant (Dental) T. K. Place, to H.Q., Egypt, 21/9.

Flying Officers G. S. Strachan, M.B., to Station H.Q., Birchem Newton, instead of to Andover, 28/8. C. W. Coffey, to Station H.Q., Andover, instead of to Birchem Newton, 18/9. P. H. Perkins, to No. 58 Sqdn., Worthy Down, instead of to No. 100 Sqdn., 15/9. G. J. Griffiths, T. W. Wilson, D. B. Smith, M.B., J. McM. Wilder, F. B. C. L. B. Crawford, M.B., R. J. K. Chattey, B. L. Edwards, M.B., and E. A. Aslett, to H.Q., Iraq, 21/9. J. Magner, M.B., and E. J. Mockler, M.B., to H.Q., India, 21/9. P. D. Barling, M.B., to H.Q., Egypt, 21/9. Flying Officers (Q.Mstr. Medical) F. W. Goodread, to Stores Depot, Iraq, 21/9. D. Breen, to Palestine General Hospital, 21/9.

STORES BRANCH.—Flight Lieutenants W. J. King, D.C.M., to No. 21 Group H.Q., West Drayton, on transfer to Home Estab., 11/10. J. London, to Station H.Q., Upavon, 6/9.

Flying Officers L. V. Hirst, J. R. R. Harvey, J. W. Hustwaite, M. F. Tomkins, and L. W. Park, to School of Store Accounting and Storekeeping, Kidbrooke, 1/10. J. W. Mitchell, to School of Store Accounting and Storekeeping, Kidbrooke, 30/9. Pilot Officer L. F. Caunter, to No. 4 Sqdn., S. Farnborough, 14/9.

ACCOUNTANT BRANCH.—Flight Lieutenants H. J. Gilbert, to remain at School of T.T. (Men), Manston, instead of to A. and A.E.E., as previously notified, 23/9. H. C. F. Ellis, to remain at A. and A.E.E., instead of to No. 1 School of T.T. (Apprentices), as previously notified, 4/10.

Flying Officers R. G. Dyer, to Central Accountant Office, Poona, 21/9. S. C. George, to No. 2 Arm. Car Coy., Palestine, 6/9. Pilot Officers J. P. Cave and W. F. Quilliam, to Station H.Q., Upavon, 6/9.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Kenley, Surrey, to a Grebe aeroplane of No. 56 Squadron, Biggin Hill, Kent, on Oct. 8, No. 312488 S.M.1 Erik Gutzeit Haug, the pilot and sole occupant of the aircraft, was killed.

The Air Ministry regrets to announce that Flg. Off. Philip Hedgeland Nicholls died on Oct. 5 as the result of injuries sustained on Oct. 1 in an accident at Peshawar, India, to a Bristol Fighter of No. 20 Sqdn., Peshawar. Flg. Off. Nicholls was the pilot of the aircraft. His passenger, No. 347556 L-AC. George Cairns, received only slight injuries.

The Dominion Premiers' Visit to Croydon.

The Secretary of State for Air on behalf of H.M. Government has issued invitations to the Prime Ministers and other representatives of the Dominions and India and other guests to witness an inspection of Service and Civil aeroplanes at the London Terminal Aerodrome, Croydon, on Saturday, Oct. 23, at 2.30 p.m.

Facilities will be provided for the Public to witness what one gathers will be a miniature R.A.F. Pageant.

Air Action in Iraq.

A *Reuter* message from Baghdad of Oct. 11 states:—It is reported that British aircraft have been in action in a punitive expedition against a small section of the Shammer tribe, who under the leadership of a minor Sheikh attacked a village in the Kuwait territory near the Persian Gulf.

The Prisoners of War.

The Baghdad correspondent of *The Times* in a message dated Oct. 10 states:—

Flying Officer F. M. Denny and Aircraftsman Hirst, No. 30 (Bombing) Squadron, Royal Air Force, who were captured by Sheikh Mahmud last June, returned to the British lines on Friday in charge of a strong escort of the Sheikh's warlike Kurds. An exchange of prisoners had been made in a remote mountain village, 40 miles south-east of Sulaimania.

Both Denny and Hirst looked well in spite of their long internment in the wilds of Kurdistan. They said that Sheikh Mahmud had done his best to make them comfortable; they had lived in a mud hut under a strong guard day and night, eating Kurdish food, chiefly rice, dates, and chicken, and had been allowed a daily bath and exercise. Both men are expected to arrive at Baghdad shortly.

Commander H. M. Denny, D.S.O., R.N., Retd., the father of Flying Officer F. M. Denny, has received the following telegram from his son:—"Free once more. Both O.K. at Kirkuk. Tell Hirst's mother."

Gunnery Practice in Lincolnshire.

The Air Ministry Notice to Airmen No. 63 of 1926 states:—Air gunnery and bombing practice, which takes place within the area and during the period detailed below, forms a danger to aircraft except when flying above the minimum safety height specified. No liability for accidents arising to aircraft from the use of the range in this area will be admitted. No special warning signals for aircraft will be displayed, but the usual flag signals will be employed at certain points whenever practice is in progress.

Description and Position.—An irregular shaped area, dimensions approximately 5 miles by 4 miles. Situated on the coast and extending seawards, the centre of the area being approximately 13 miles S.E. of Gt. Grimsby, Lincolnshire.

Programme of firing.—Daily, Sundays excepted, until Oct. 31, as follows:—Mondays to Fridays (inclusive) 0700 to 1800 (G.M.T.) Saturdays 0700 to 1200 (G.M.T.).

Minimum Safety Height above Sea Level.—14,000 feet. Warning Signals.—Red flags.

Educating the Air Ministry.

The Secretary of State for Air was present on Oct. 11 at the inaugural lecture of the courses and crafts classes for Air Ministry students. More than 300 members of the Department have already enrolled for the classes.

Sir Samuel Hoare said that these lectures provided one of the many answers to the charges often made against Civil Servants that they were less interested than other people in things happening outside their own departments.

The R.A.F. Memorial Fund.

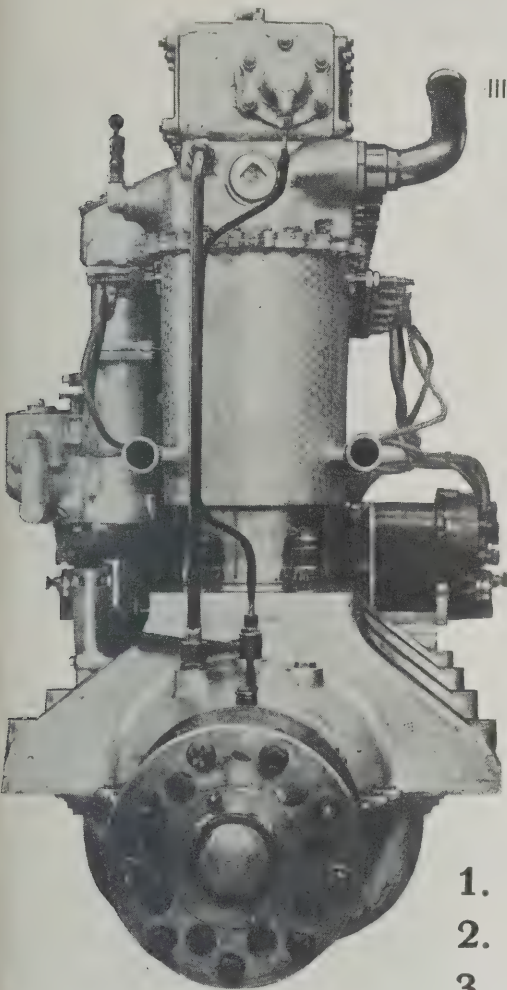
The Report of the Secretary of the R.A.F. Memorial Fund for the period between July 1 and Sept. 30 shows that 189 cases have been dealt with in the offices of the Fund and grants amounting to £1,959 6s. have been made to ex-members of the R.A.F.

The total amount of the grants to post-war members of the R.A.F. is shown as £215 8s. 9d.

The Yarmouth Re-union Dinner.

The Seventh Annual Re-Union Dinner for Officers and ex-Officers who have served at the Air Station, Great Yarmouth, will be held on the last Saturday in October (30th), at the Café Royal, Regent Street, London, W., at 7.30 for 8.0.

Application for tickets (15s. 6d. each, exclusive of wine) should be made to G. F. H. Bloom, 17, Welbeck Street, W.1.



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Contractors to the BRITISH AIR MINISTRY and most FOREIGN GOVERNMENTS.
Designers and Constructors of "MARTINSYDE" Types of Aircraft.
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"NIMBUS"
AERO ENGINE

POSSESSES

FOUR ATTRACTIVE FEATURES.

1. Lightest Engine per h.p. of its Type.
2. Exceptionally Low Petrol Consumption.
3. Installation Interchangeable with "Puma."
4. Small Frontal Area.

SPECIFICATION.

| | |
|--|------------------------------|
| Type | 6 Cylinder in line, Vertical |
| Cooling | Water. |
| Bore | 152 m/m. |
| Stroke... .. | 190 m/m. |
| Normal r.p.m. | 1,450. |
| Maximum r.p.m. | 1,600. |
| Normal b.h.p. | 305 at 1,450 r.p.m. |
| Maximum b.h.p. | 335 at 1,600 r.p.m. |
| Petrol Consumption at 305 h.p. | .53 pts. per h.p. hour. |
| Oil Consumption... .. | .017 pts. per h.p. hour. |
| Compression Ratio | 5.4 : 1. |
| Weight Dry in running order less Radiator and Water. | 670 lbs. \pm 10 lbs. |
| Weight per h.p. as above | 2 lbs. (approx.) |

THE "NIMBUS" AERO ENGINE HAS PASSED THE AIR MINISTRY TYPE TEST.

In the "NIMBUS" is presented an engine of (approx.) 2 lbs. per h.p., which not only inherits the fundamental simplicity and reliability of the six-cylinder in line engine, but achieves the result without resorting to a gear reduction and its attendant complications, or to an unduly high airscrew speed and its consequent effects upon airscrew efficiency.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE DE HAVILLAND HERCULES.

The first De Havilland three-engined aircraft, known as the Type 66, and officially named the Hercules, which was recently completed at the De Havilland Works at Stag Lane is an unusually interesting and important machine. If for no other reason, it would be of special interest because it has been built to comply with a stringent and detailed specification issued by Imperial Airways Ltd. and not by the Air Ministry. The design is necessarily in accord with official requirements as to airworthiness, but in detail the D.H.66 has been built to meet the ideas of an aircraft-operating firm as to what will constitute a satisfactory aeroplane for a specific service.

It may fairly be said that previous British aircraft intended for commercial purposes have represented either the designer's idea of what such a machine should be, or his attempt to meet the ideas of the Air Ministry on the same subject. This statement involves no reflection on either the designers or the Air Ministry, for someone had to have ideas and get them tried out before aircraft operators could acquire the experience necessary to compile his own specifications.

CONDITIONS OF SERVICE.

The D.H.66 is intended for service on the new Cairo—Karachi route, which is to be opened at the beginning of 1927. Conditions on that route will necessarily differ very considerably from those existing on the European lines now operated by Imperial Airways, and the D.H.66 cannot therefore be directly compared with machines already in service on the British air lines. One noticeable difference is to be found in the fact that no attempt has been made in the Hercules to carry the greatest possible pay load. A very ample reserve of power and the greatest possible degree of reliability in the power-plant have been the objects mainly in view.

It can easily be seen that reliability of a very high order is essential on this particular service. On the European services of Imperial Airways in the year 1925/26, 7%, or say 1 in 15, of scheduled flights were interrupted by an involuntary landing. The average length of each of these scheduled flights was about 250 miles. Cairo to Karachi is over 2,500 miles, or the equivalent of 10 of the European flights.

Half the European forced landings were due to weather, and this cause of interruption should not be encountered on the new service with European frequency. But, neglecting all weather influences, the same degree of reliability as has been attained in Europe would give one interruption in three through trips between Egypt and India, as the result of mechanical defects.

A forced landing in Europe is sufficiently annoying, but a multitude of them on the Eastern route would ruin any prospect of the service achieving success. The service if reliable will save at least a week in the time taken to reach India, and it may reasonably be supposed that the rates which can be charged for mails and passengers will be considerably higher than can be extracted on European services, which afford very small opportunities for the saving of time. Under

these circumstances a sacrifice in pay load to secure reliability is commercially economical.

THE MACHINE.

The D.H.66 has been designed so that it may carry fourteen passengers, luggage and some mails, together with fuel for five hours, with three Jupiter VI engines, each of 450 h.p. At the beginning, however, seats for only seven passengers will be fitted.

It is never possible to obtain from the De Havilland Aircraft Co. any statement of the expected performance of new aircraft. In this case they state that they believe that a good performance will be obtained, and it is probably not rash to suggest that the D.H.66 will be able to work to schedule with its normal full load with any two engines developing less than their rated full power.

Unofficially one learns that the performance of the D.H.66 surpasses all expectations. Her speed is ten miles an hour, or more, above her contract speed and her climb is 200 ft. per minute above contract, and those figures have been reached with more than her normal full load. Her cruising speed is well over 100 m.p.h. and her top speed is over 125 m.p.h.

Starting over Watford at 2,000 ft. with only the central engine running the machine lost only 500 feet by the time it reached Stag Lane,—again with more than full load.

Given the proved reliability of the Bristol Jupiter and the standard of maintenance characteristic of Imperial Airways, landings away from an aerodrome by a D.H.66 ought to be extremely rare occurrences, and the new service may be expected to set a new standard in air line regularity and reliability.

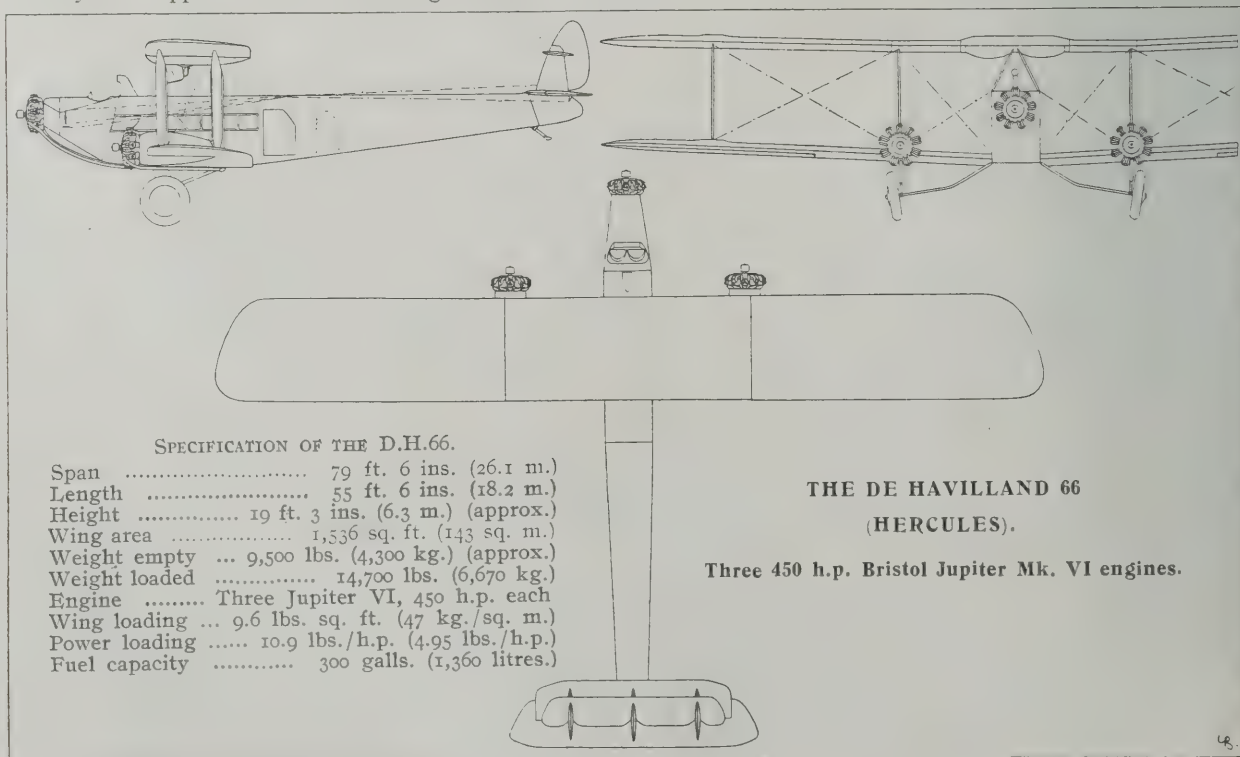
The D.H.66 is an equal-winged biplane carrying one engine in the nose of the fuselage and two, one on each side, mounted on the lower wings. All three engines drive tractor airscrews.

THE FUSELAGE AND CABIN.

The fuselage main structure, rectangular in section, is built of steel tubes, in straight lengths, with mechanical joints and swaged-rod bracing throughout. Any damaged member can be easily removed and replaced without elaborate workshop facilities or any call for highly specialised labour.

Within the steel framing is contained a timber-framed and plywood-walled cabin as an internal structure, and outside the steel frame is the usual doped fabric covering. Thus, except at the window spaces, the whole of the passenger and goods space is double-walled, with an air space between the walls—a feature which should make for quiet and also serve to insulate the interior from radiant heat.

The cabin proper is some 16 ft. long and of 450 cub. ft. capacity and provides space for fourteen passengers. As has been already mentioned, it is not proposed at first to provide more than seven seats, and a movable partition is to be provided so that the cabin space not used for seats may be used for mails or goods. Triplex windows, one half openable, are fitted on each side over the whole length of this cabin.



SPECIFICATION OF THE D.H.66.

| | |
|---------------|----------------------------------|
| Span | 79 ft. 6 ins. (26.1 m.) |
| Length | 55 ft. 6 ins. (18.2 m.) |
| Height | 19 ft. 3 ins. (6.3 m.) (approx.) |
| Wing area | 1,536 sq. ft. (143 sq. m.) |
| Weight empty | 9,500 lbs. (4,300 kg.) (approx.) |
| Weight loaded | 14,700 lbs. (6,670 kg.) |
| Engine | Three Jupiter VI, 450 h.p. each |
| Wing loading | 9.6 lbs. sq. ft. (47 kg./sq. m.) |
| Power loading | 10.9 lbs./h.p. (4.95 lbs./h.p.) |
| Fuel capacity | 300 galls. (1,360 litres.) |

THE DE HAVILLAND 66
(HERCULES).

Three 450 h.p. Bristol Jupiter Mk. VI engines.

125,000 MILES.

THE actual D.H. Type 50 Seaplane on which Sir Alan J. Cobham has just completed his wonderful flight of 28,000 miles to AUSTRALIA AND BACK has now covered 125,000 miles, *including*

THE FIRST FLIGHTS EVER CARRIED OUT TO RANGOON AND BACK, TO CAPE TOWN AND BACK AND TO MELBOURNE AND BACK.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

As the machine will operate in tropical conditions, adequate ventilation of the cabin space is of the utmost importance. The exact arrangements to be adopted to supply fresh and, as far as possible, cool air will be settled after tests of a certain number of alternative arrangements. That tentatively fitted to the first machine includes a large air scoop mounted above the top of the body at the front of the cabin. Air from this scoop passes into a diffuser box of large capacity and is discharged into the cabin through a large area of porous fabric which should effectively prevent the formation of any draught.

Behind the cabin proper, and provided with a separate entrance door, is a luggage compartment of approximately 160 cub. ft. capacity.

THE OFFICE AND ENGINES.

Ahead of the cabin are side-by-side seats for pilot and navigator. The seat normally used by the pilot is on the port side and is on a higher level than the navigator's seat. Complete dual control of the stick type is provided, so that the pilot may be relieved when necessary.

From the cockpit, the section of the fuselage tapers rapidly to a small square engine plate to carry the central Jupiter engine.

The central engine-plate, and those for the wing engines, are remarkably light, being of rivetted duralumin plate.

The bracing behind these plates is of steel tube, and swaged tie-rods are run in parallel with certain of these tubes. By putting an initial tension into these rods all joints on the tubes are kept tight and the development of chatter is prevented.

Each engine is fitted with a standard Bristol Jupiter exhaust-ring and with long exhaust-pipes having closed ends and drilled with a large number of small holes. The exhaust-

pipes for the wing engines pass below the lower wing and end at about the trailing edge.

Those for the centre engine pass below the fuselage, and each is encased with an air-heater muff fitted below the cockpit, which supply warmed air to the cabin when needed.

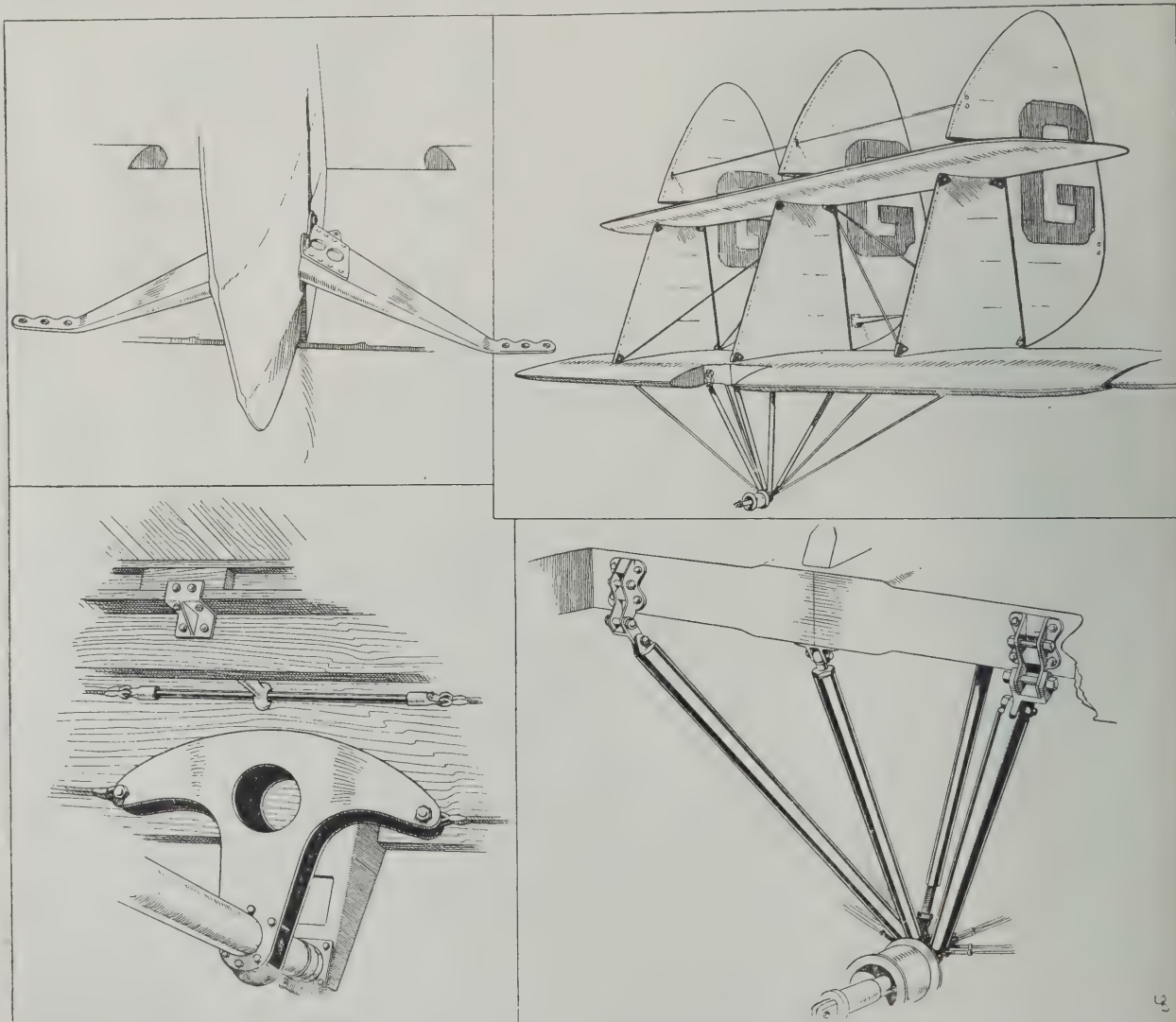
A Bristol gas-starter is mounted on top of the fuselage just behind the pilot's seat, and is equipped to start each or all of the engines in turn. It must be admitted that it looks very untidy in this position, but there are very strong practical reasons for fitting it there. It can be used by the pilot without leaving his seat, which may be of great importance in some cases. Further, in the event of a forced landing leading to a damaged undercarriage, the starter will pretty certainly escape damage, and it can then be used to drive the wireless generator, normally wind-driven, which is mounted alongside it.

It will readily be understood that in the event of such an accident occurring far from an aerodrome on the near East route the ability to use the wireless set will be of enormous importance, and consequently the fitting of the starter in a position which renders it possible to do this is well worth the added drag which this arrangement must give.

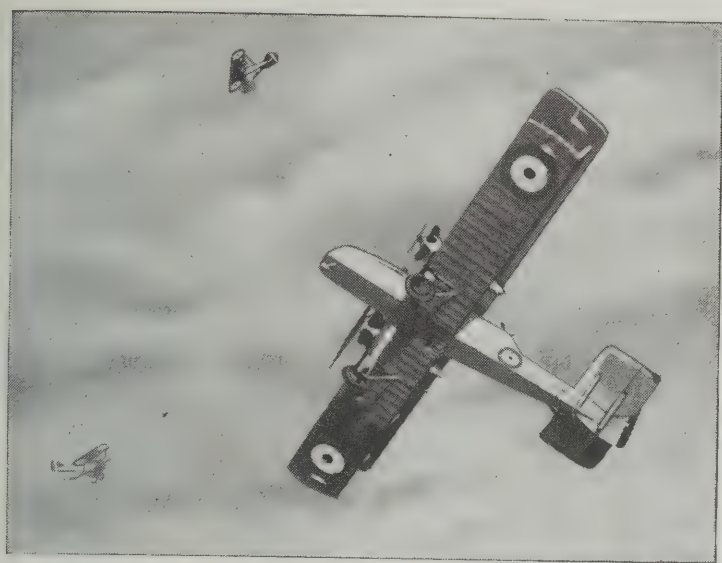
Apart from the common fuel tanks in the centre section, each engine is arranged as a separate power unit, with its own oil tanks, Bristol oil cooler and instruments.

The central engine instruments are fitted on the dash as usual.

The revolution indicator oil pressure and oil temperature gauges for the wing engines are mounted on the front interplane struts above each engine at about the pilot's eye-level. This although not an ideal arrangement is undoubtedly the best that can be done until reliable engine instruments which indicate at a distance are developed.



THE D.H.66 CONTROLS.—Top, left, the raked back rudder king-posts which give a variable rudder gear ratio. Top, right, the sesquiplane tail unit complete. Bottom, left, the aileron control rocking shaft with the sector to which the aileron cables are fixed. Above this is seen the central guides for the aileron balance wires. Right, the tail incidence adjusting gear. The whole tail unit is attached to the fuselage by the two hinges on the tail plane front spar, and by the fork joint fitting on the telescopic member attached to the bottom of the tubular pyramid. Cables running round the flanged drum shorten or lengthen this member by a screw gear of normal type and rock the whole tail about the upper hinges.



THE Boulton
& Paul Bugle.
Entirely of Metal
Construction.

The Boulton & Paul Bugle in combat



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THE WINGS.

The wings are of normal timber construction. Spars are of box section with spindled spruce stringers top and bottom, and three-ply sides.

Laminated spruce packing blocks are inserted at the strut attachment points, and the whole spar is wrapped with glued-on fabric tape.

The ribs are of the normal spruce girder type. The leading and trailing edges are of duralumin tube. The drag struts are of steel tube and the drag bracing is of stranded steel cable.

The upper wing is in three sections. The centre section is carried from the fuselage on four steel tube struts, and is thickened up to enclose two main petrol tanks with a total capacity of 300 gallons. This section has a span of approximately 23 ft.

The corresponding part of the lower wings is in two sections, one on each side of the fuselage, and carries the wing engine-mountings and the undercarriage. The outer extremities of these sections are sloped inwards and rearwards so that the span of the leading edge is greater than that of the trailing edge.

The end rib is of very strong box construction, and a second rib of similar construction meets this at the back spar, making a rigid triangular bay over the engine space. In addition two steel tubes, one at the top and one at the bottom, join the two spars midway between these ribs, and on the centre-line of the undercarriage attachments.

The wing engine-plates are supported by a steel tube structure supported from the front spar and braced back to the rear spar.

A steel tube interplane strut passes up through the middle of this structure over each spar and the two legs of the undercarriage Vee are coupled to the terminals of the lower of the fore-and-aft steel tubes above-mentioned.

The outer section of both top and bottom wings are of approximately the same dimensions, and are braced with one pair of interplane struts on each side, with the usual cross-bracing of streamline wire. Both top and bottom outer sections have a dihedral, that of the lower wing being greater than that of the top.

Ailerons, which are differentially controlled, are fitted on the lower wings only.

THE SESQUIPLANE TAIL.

The tail-unit is of somewhat novel form. There are two fixed horizontal surfaces arranged as a biplane. The upper of these is of considerably smaller chord and slightly less span than the lower, and has no elevator behind it. The

lower tail surface has a large undivided and balanced elevator hinged to its rear spar.

The two horizontal surfaces are separated by three vertical fins and braced by streamline wire. Each fin is followed by a balanced rudder. All these tail surfaces are remarkable for their unusually high aspect ratio.

The tail-unit forms a single, rigidly-braced structure which is carried on the end of the main fuselage framing by hinges attached to the front spar of the lower tailplane and by a telescopic (screwed) member attached to the bottom of the fuselage and to a steel tube pyramid below the tail plane.

Shortening or lengthening the telescopic member (which is controlled by the usual handwheel and cable system from the pilot's seat) rocks the whole tail about the hinges and provides a trimming adjustment.

The bracing system below the tail unit is enclosed in a fairing which continues the fuselage lines.

An interesting detail of the tail unit is the simple method adopted to give a variable gear to the rudder control.

The king-posts on the central rudder, to which the rudder-bar is coupled, are raked back so that the control wires are attached well behind the hinge axis. When the rudder is central, the effective leverage of the king-posts is considerably less than the radius from the hinge axis to the wire attachment, because of the large inclination of the king-posts. As the rudder moves to one side, the effective lever arm approaches this radius, and consequently the rudder gear-ratio falls as the rudder is moved over.

THE UNDERCARRIAGE.

The undercarriage consists of a pair of axles, hinged at the two bottom edges of the fuselage, and each supported below the engines by a V attached to front and rear spars of the central section of the wings.

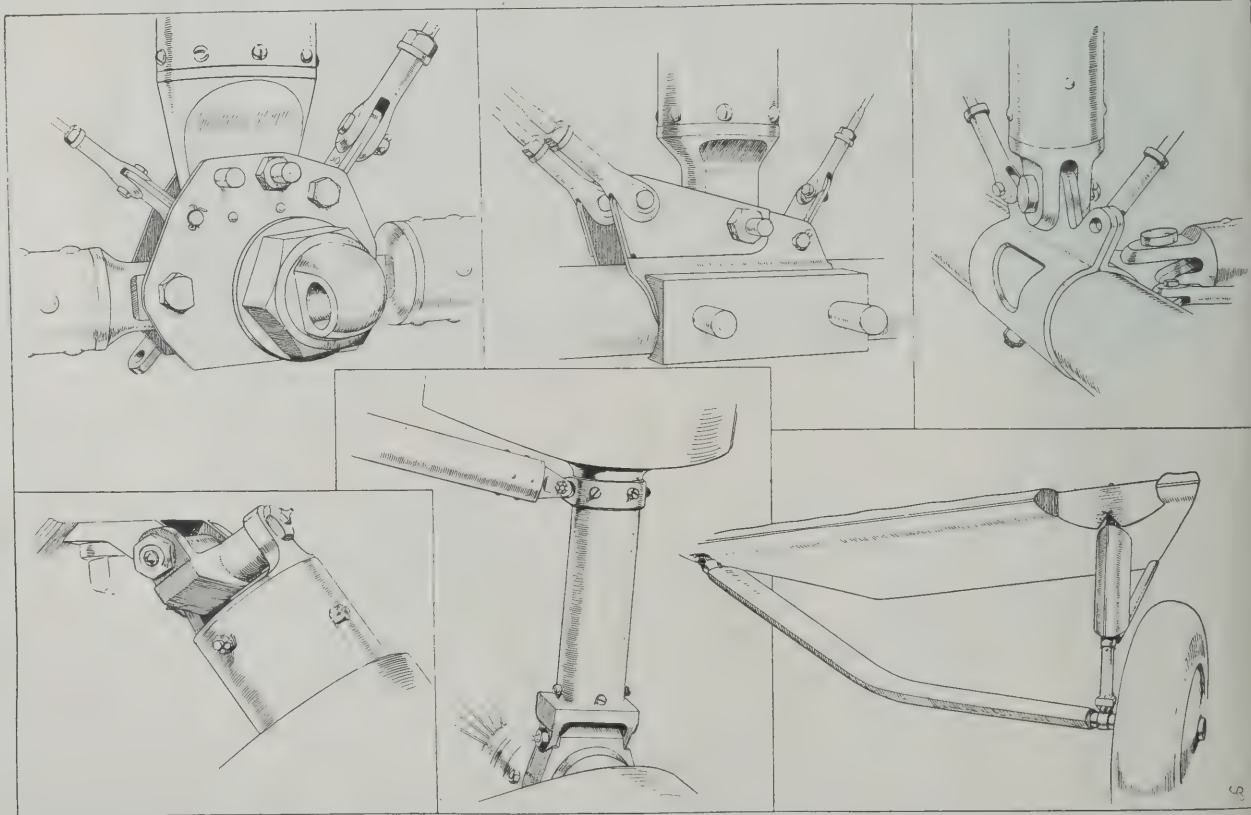
These Vees have telescopic front legs with rubber blocks in compression as shock-absorbers. The rear leg of the V is attached to the front leg some considerable distance (about one foot) above the axle. A single Dunlop wheel and tyre is fitted on each side, with an overall track of some 23 feet.

CONTROLS.

Special care has been taken with the arrangement of the control leads to ensure the maximum reliability and ease of inspection.

The control columns are connected to a fore-and-aft shaft set at an angle to the horizontal, so that the after end comes below the front spar of the lower wing root, where it is carried in substantial bearings.

A quadrant built up from steel sheet is carried to this shaft and the aileron-operating cables run from this quadrant straight through the nose section of the lower wings to the



THE D.H.66.—Fuselage and undercarriage details. Top, left to right, front wing spar attachment and joint between two lengths of fuselage longeron. Strut and wire fitting with block and studs for rear spar fitting: Normal fuselage fitting. Bottom, left to right, axle hinge fitting at fuselage, shock absorber leg attachment to axle and bracing tube. General view of one undercarriage unit.

SIR ALAN COBHAM'S FLIGHT TO AUSTRALIA.



SHORT ALL-METAL FLOATS

were utilised by Sir Alan Cobham on his D.H.50.J. machine during his magnificent flight across half the world, flying over many thousands of miles of ocean.

These floats, upon which the success of the flight so very largely depended, were specially designed and built by the pioneers of British All-Metal Aircraft.

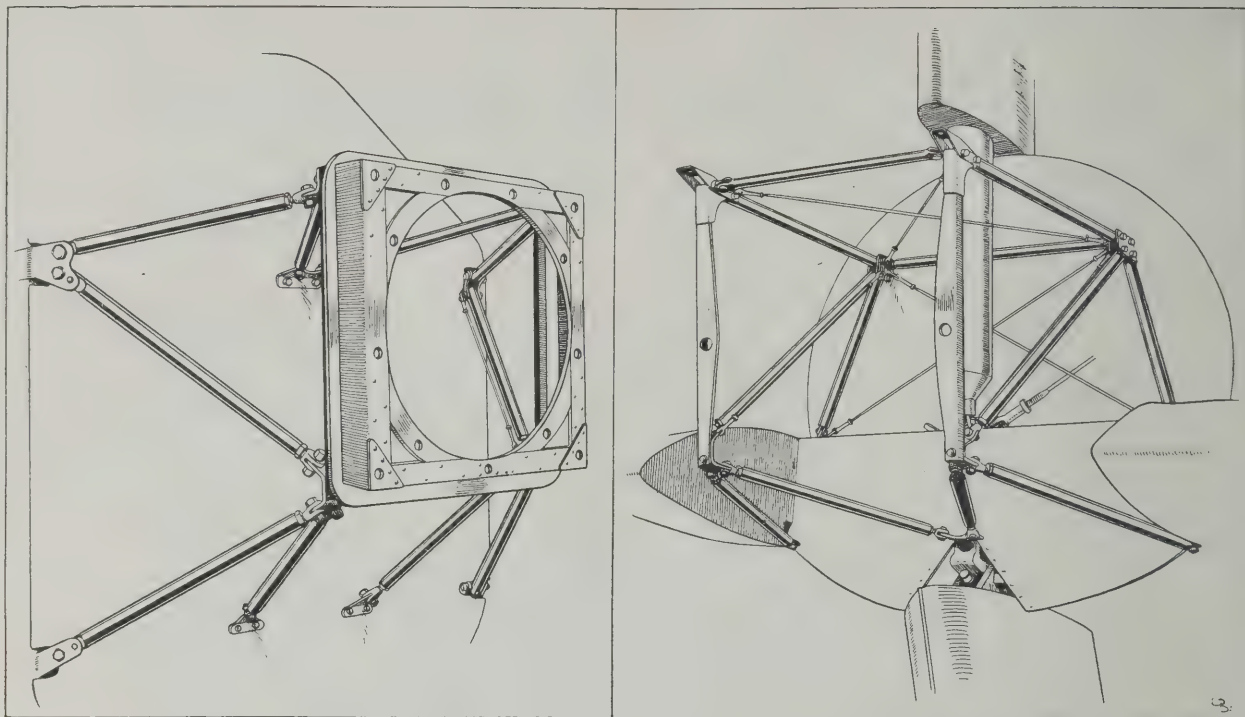
SHORT BROS.

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Seaplane Works:

ROCHESTER, KENT.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE D.H.66 ENGINE MOUNTINGS.—Left, the central mounting on the fuselage, complete with the duralumin engine plate. Right, one of the wing mountings with the engine plate removed. The engine plate is precisely similar to that used on the central mount. Oil tanks are carried in a fairing behind the circular bulkhead at the back of the interplane strut.

De Havilland differential gear which is mounted within the wing ahead of the front spar.

A disc carrying a crank-pin is here arranged flush with the wing surface and the ailerons are operated by a stout steel tube from the crank-pin to the aileron king-posts. The aileron return wires also run straight through the wing nose.

Elevator and rudder wires are all taken outside the fuselage at the cockpit, and are carried outside right to the tail.

The guides used for these and the aileron controls are all of the type which has been standard on D.H. civil aircraft

for some years. These consist of substantial steel rods sliding in guides with bronze bushes, and only straight lengths of cable which join the ends of the rods are employed throughout the system.

Experience shows that guides of this type are quite satisfactory as junctions between two cables at an appreciable angle one to another, and that they have a very long life, whereas a cable if passed round a pulley or any form of tubular guide, wears out very rapidly indeed, however small may be the change of direction at the guide.

THE TRANS-CANADIAN FLIGHT.

The first trans-Canadian flight by one machine and its crew was successfully ended at 16.20 hrs. on Sept. 19, when Mr. McKey, a wealthy American sporting aviator, accompanied by Sq. Ldr. Earl Godfrey, R.C.A.F., of the R.C.A.F. Headquarters, Ottawa, landed in a Douglas seaplane (400 h.p. Liberty engine) at Jericho Beach seaplane station, Vancouver, British Columbia. The machine-miles flown were approximately 3,600, the time taken to cross the country was nearly six days, and the total flying time was 36 hours 25 minutes.

On Oct. 7, 1920, Lt.-Col. R. Leckie and Major B. Hobbs left Halifax, Nova Scotia, in an attempt to fly across Canada, but only reached Lake Winnipeg, whence their mails and messages were taken on to Vancouver by a D.H.9a, piloted by Capt. C. W. Thompson, who arrived on Oct. 14,—thus proving that Canada could be crossed by air.

The McKey-Godfrey flight was attempted purely for sport and Sq. Ldr. Godfrey's presence is explained by the fact that Mr. McKey, who flies as a hobby and who is the owner of the seaplane, after he had obtained permission from the Canadian Government to fly over Canadian territory, extended an invitation to any officer of the R.C.A.F. to accompany him. Consequently Sq. Ldr. Godfrey was granted permission to go, because it was considered that a seaplane flight across Canada was interesting from an experimental viewpoint, and further, as this officer had had much experience of flying over the different sections of country en route, it was considered that his knowledge of the disposition of R.C.A.F. stations, suitable landing places, and difficult flying country, would be of extreme value.

The Douglas seaplane, one of the "World-cruiser" type, was equipped with dual controls, and the two aviators equally shared the piloting throughout the flight. All along the route, from Montreal to Vancouver, R.C.A.F. stations were used for refuelling, etc., and every attention and courtesy was extended by the personnel of these units.

No trouble of any kind was experienced with the machine, and the Liberty behaved perfectly until within a short distance of Vancouver, when leaks developed in two of the cylinder jackets. This, however, did not necessitate a forced landing.

The start was made from Montreal on Sept. 11, and an overnight stay was made at Ottawa. The journey was resumed next day but bad weather was met, and a landing had to be made on a small lake situated between Ottawa and Sudbury, Ont.

Bad weather continued throughout the day, and it was not until Sept. 13 that Sudbury was reached. From Sudbury the seaplane flew to Lac de Bonnet, near Winnipeg, Manitoba, and then on to the Pas, following the waters of the Manitoba Lake.

A stop was made at Prince Albert, Saskatchewan, and when the flight was resumed the Saskatchewan River was followed to the Wabaman Lake, near Edmonton, Alberta.

From an aeronautical point of view the next part of the journey was precarious and difficult. The aviators left Edmonton and made for the famous Yellowhead Pass, which is situated in the heart of the Rocky Mountains, through which the Canadian National Railway runs. For five or six hours they were flying surrounded and over-topped by snow caps, some as high as 13,000 feet, and over dense forest, and deep ravines, but no bad atmospheric conditions were met.

From certain parts of British Columbia to the Coast they did not cross any stretches of water on which a landing could have been made with any degree of safety, but the Liberty's past behaviour and the fact that they were both wearing parachutes, dispelled any anxiety.

The last lap of the journey was approximately 700 miles which they did in about 7 hours 40 minutes.

Although, as before stated, this flight was intended to be nothing but a sporting trip, the performance is noteworthy when it is considered that the whole of the journey was made in a seaplane. Although the aviators have been criticised for making the last leg of the journey in a machine with floats, it is obvious, when the geography of the country is considered, that there would have been no advantage, other than that of additional speed, in using a machine with a wheeled undercarriage.

When commercial aeronautics develop in Canada, it seems that the most suitable type of aircraft to use will be a triple-engined amphibian for flying passengers over such country as British Columbia.—B. H.

AIRCRAFT

OF ALL TYPES.



THE "HORSLEY."

[Right Photo.]

The Hawker Horsley was selected, after exhaustive tests, as the R.A.F. Standard Day Bomber, once again demonstrating the efficiency of Hawker design and construction.

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HAWKER ENGINEERING CO., LTD.

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BROOKLANDS.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE HANDLEY PAGE HAMLET.

An interesting aircraft of a type not hitherto produced in this country is the Handley Page Hamlet which it is hoped will be flying within a day or two of the appearance of these notices.

The Hamlet is a three-engined monoplane of comparatively small size, fitted with three Bristol Lucifer, Series IV, engines of 130 h.p. each, designed to carry a pilot and four passengers in comfortable quarters. Actually there is room in the cabin for six passengers, and the machine should have no difficulty whatever in carrying this number and a reasonable quantity of luggage. Seven persons with 390 h.p. works out at over 55 h.p. per passenger, which is quite a handsome allowance.

Hitherto British multi-engined machines, the Short Cockle excepted, have all been large machines. For service on outlying routes in the Dominions and in other countries which have only rudimentary transport facilities, the reliability which is expected from the multi-engined type is at least as important as it is on European services. But the amount of traffic, at any rate in the early stages of operation, is certainly not likely to justify the use of machines of 1,200 h.p. or so. There are, therefore, definite opportunities for a three-engined passenger carrier of moderate size, such as the Hamlet, and the Directorate of Civil Aviation deserves to be congratulated on having encouraged this production.

The Hamlet is interesting from another point of view in that it is the first aeroplane produced in this country and intended for regular civil transport purposes which has been fitted with complete Handley Page slot and flap gear.

GENERAL DESCRIPTION.

The lay-out of the machine is clearly shown in the general arrangement drawing which is here produced. It is of the high-wing monoplane type with rigid bracing to the wing. One engine is fitted to the nose of the fuselage and the two others are carried between the wing and the wing bracing struts by a triangulated structure of steel tubes.

Fuel tanks are recessed into the wings on each side of the body, giving gravity feed to all engines.

To each wing-engine mounting is attached one telescopic undercarriage leg, with compression rubber springing and oleo damping gear, which supports an axle hinged to the fuselage at the root of the front spar bracing strut. The joint between axle and leg is stayed by a third tube running forward to the bottom edge of the fuselage.

Mudguards are fitted to each wheel to prevent dirt and pebbles from being thrown into the airscrews above.

The tail unit includes a single central fin and a rudder balanced by the "inset hinge" method; and a monoplane tailplane and elevator carried well above the fuselage.

THE WINGS.

The wings are built in two sections on box spars, and their profile, when the slots are closed and the flaps are in normal position, is that known as Raf. 31. This is a thick section of remarkably low resistance which also gives a fairly high lift, and seems to suffer from no objectionable qualities.

The auxiliary nose-aerofoil which forms the leading edge slot is built up of aluminium sheet on solid mahogany ribs, and is carried from a stout steel tube mounted in front of the front spar by a series of parallel link motions so arranged that rotating the tube causes the nose-aerofoil either to close down tight on the fixed wing, or to advance ahead of it and open the slot.

The trailing edge flaps are in two sections on each side. The inner sections operate only in conjunction with the leading edge slot. That is to say they are pulled down when the slot is opened.

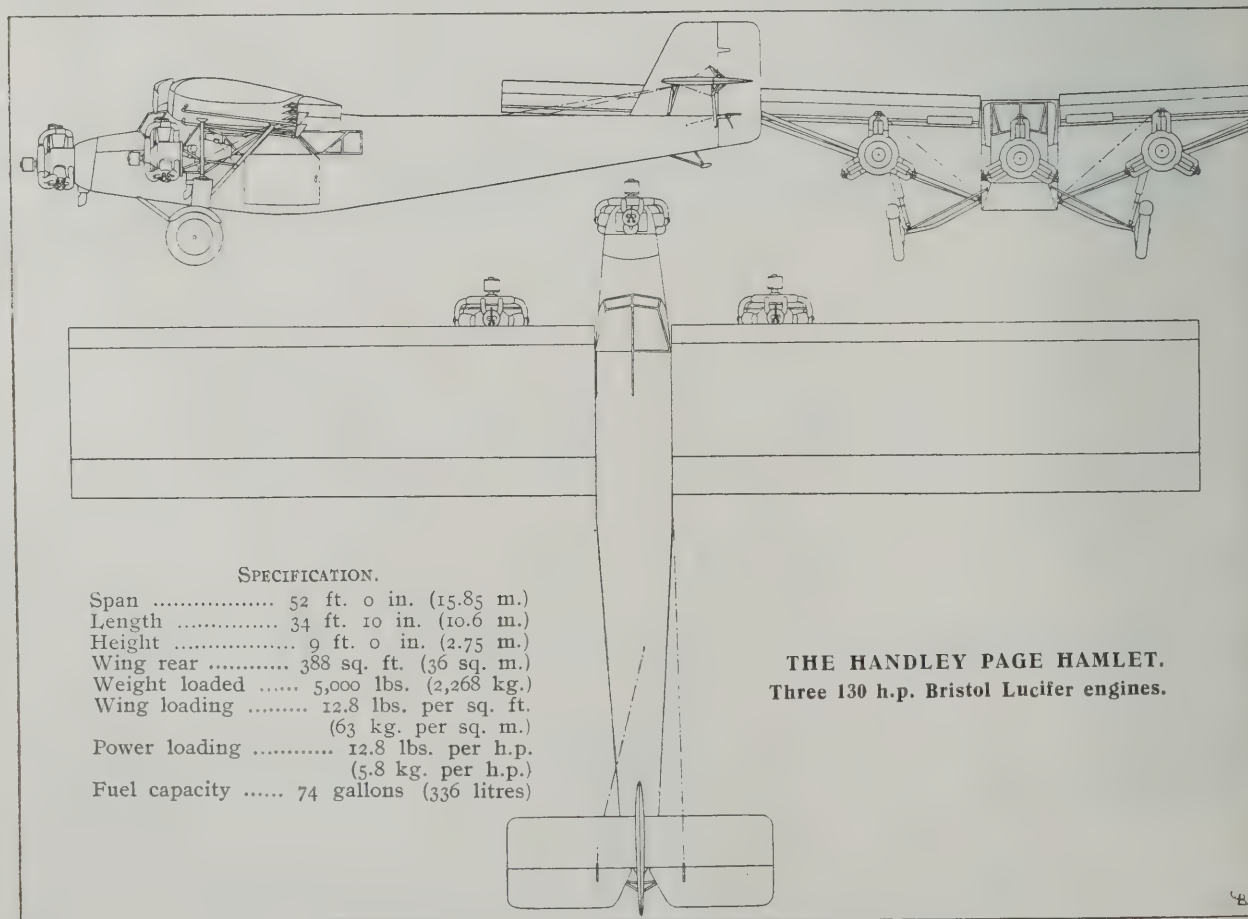
The outer sections also work in conjunction with the leading edge slot, but in addition to this they serve as ailerons.

THE SLOT AND FLAP GEAR.

The mechanism controlling the slot and flap gear is very ingenious and is indicated on one of the drawings which are published herewith. Each flap is provided with one downward-projecting king-post, coupled by a pull-and-push rod to a lever pivoted on one of the brackets carrying the control tube of the front slot.

The upper end of this lever has in it a curved cam slot and a pin carried by an extension of the link operating the front slot engages in this slot. At first sight it looks as though opening the slot would move the flaps upwards, but actually owing to the slope of the cam-slot the reverse effect is produced.

Precisely the same type of cam gear is used for the aileron section of the flaps. But instead of a direct connection from the flap to the cam-operated lever, this lever has mounted upon it a chain-wheel which is rotated by lateral movement of the control stick. On the lower face of the chain-wheel is a crank-pin and to this is coupled the aileron push-and-pull rod.



THE HANDLEY PAGE HAMLET.
Three 130 h.p. Bristol Lucifer engines.



VICKERS LIMITED

THE VICKERS "VIRGINIA" LONG DISTANCE BOMBER
(Twin 450 h.p. Napier "Lion" Engines)

Extract from:—

OFFICIAL  REPORT.

Parliamentary Debates
HOUSE OF COMMONS.

VOL. 192, No. 18. THURSDAY, 25th FEBRUARY, 1926

"The SECRETARY of STATE for AIR
(Sir Samuel Hoare):

Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing.

Lieut.-Commander BURNEY: With full service load.

Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance, of about 800 miles, spending as much as 12½ hours continuously in the air.

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SPAN (FOLDED) .. 44'-3"

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(Fuel, Crew and Armament).
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It will be realised that if the control stick is held steady and the flap gear operated, the ailerons will move precisely as though the crank-pin were rigidly fixed to the lever which carries it and will share the movement of the inner flaps. At the same time any movement of the control stick will rotate the sprocket and produce a normal aileron movement irrespective of the position of the slot and flap gear.

As a matter of fact this last statement is not strictly accurate, for in detail the movement of the ailerons is modified by the position of the slot gear. With the slot closed the angular position of the aileron crank-pin produces a normal differential effect, such as is produced by the De Havilland differential aileron gear, and the up-going aileron moves through a bigger angle than the down-going one. When the slots open and the flaps are down the angular relations between king-post, push-and-pull rod and crank-pin are altered to such an extent that the differential action is reversed and the down-going aileron has the greater movement. And thus the full effect of the slots is attained.

THE FUSELAGE.

The body is of the normal rectangular section, built on four spruce longerons, with strut-and-wire bracing.

Over the pilot's cockpit and cabin three-ply sides and floors are used, but aft this it is fabric-covered.

The pilot's cockpit is provided with a fixed Vee-pointed wind-screen of glass, fitted with an electric wind-screen wiper, and is covered overhead with Cellon panels. The pilot sits on the port side, and the panel over his head can be opened by sliding it backwards.

The flying controls consist of a stick and rudder-bar, a slot-control handle (which rotates the torque-tube in the wing through two worm drives), and a hand-wheel controlling the incidence of the tail.

On the starboard side of the cockpit is installed a complete W.T. outfit. This can either be controlled by the pilot, or, if so desired, by one of the occupants of the cabin—who can obtain access to the cockpit by a sliding door on the same side.

The cabin is some 7 ft. 6 in. long, has nearly 5 ft. head-room, and is about 3 ft. wide. It has Cellon windows over its whole length on both sides, and obtains additional illu-

mination through the pilot's cockpit and the above-mentioned sliding door which is also glazed with Cellon.

Entrance to the cabin and thence to the cockpit is given by a large door in the port side, and the floor of the cabin is low enough to permit of stepping straight into it.

A settee, which is adjustable for angle and position, is fitted right across the cabin at the back. A fixed seat back to back with that of the pilot is fitted at the other end, on the port side, with a folding seat (to allow use of the sliding door) alongside. A folding table fixed to the starboard wall of the cabin may be let down between the two sets of seats.

The cabin is electrically lighted, is fitted with an air-speed indicator, altimeter and clock, and also with a drinking-water tap and tank. A locker for small articles is fitted below the front fixed seat.

There is no separate luggage compartment, but there is ample room for ordinary personal luggage in the cabin.

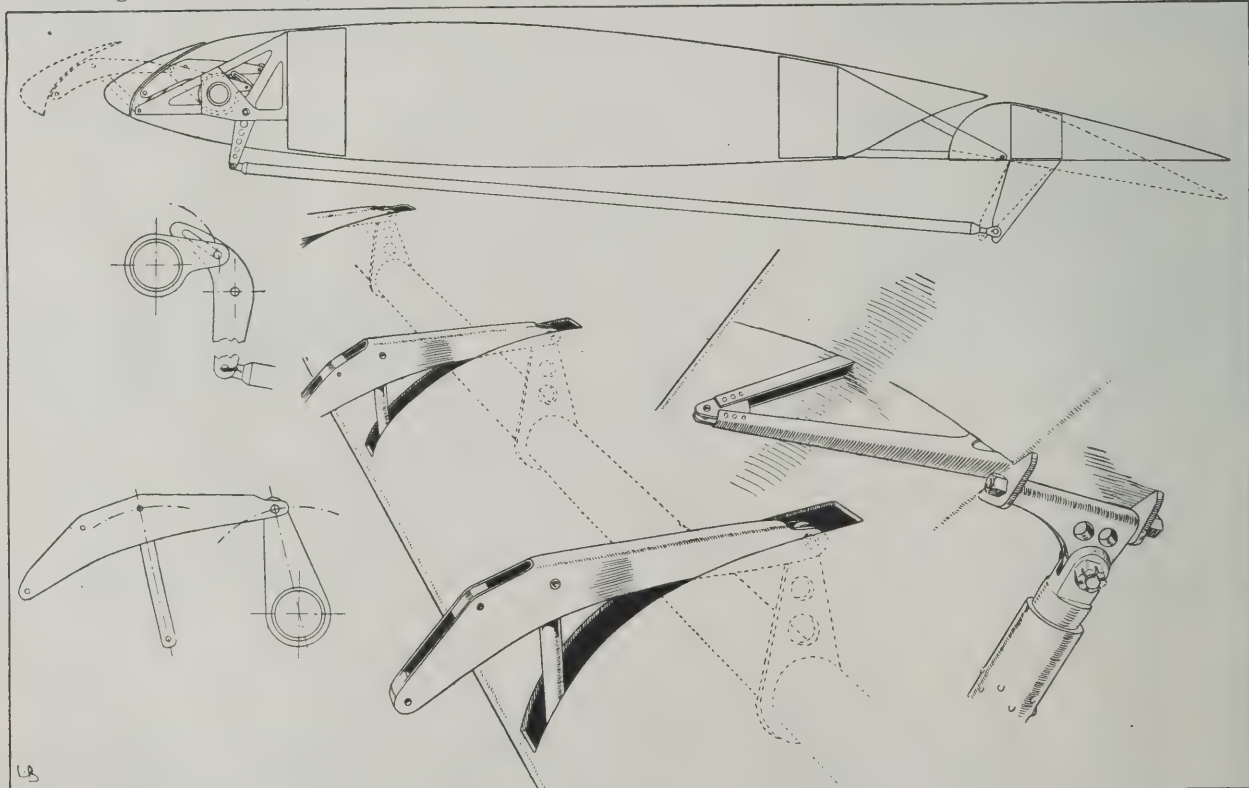
Information as to the expected performance is not available, but from the low power-loading it may safely be assumed that the Hamlet will be distinctly speedy.

THE LIGUE INTERNATIONALE DES AVIATEURS.

The *Ligue Internationale des Aviateurs* gave a banquet last week in honour of Colonel Falchi, the Chairman of the Italian Post of the League, before he returned to Rome on Thursday. The various record-breaking aviators in France were among the guests of honour, and about 250 people were present.

Mr. Clifford B. Harmon, the President of the League, and the Comte de la Vaulx, who was a famous balloonist before aeroplanes were invented, were to have accompanied Col. Falchi by air to Rome to thank the Italian Government for their help to the League, and also to take part in the annual convention of the *Fédération Aéronautique Internationale* in Rome, but Mr. Harmon was advised by his doctor that it would be unwise for him to take the risk of a cold journey at this time of the year, so he is at present in Paris looking after the interests of the League at Headquarters.

M. Ladislas Dorcy, the first secretary of the League, has ceased to hold that office. The name of the new secretary will be announced in this paper as soon as the appointment has been made.



THE HANDLEY PAGE HAMLET SLOT AND FLAP GEAR DETAILS.—At the top is a diagrammatic section of the wing showing the general relation of the various parts. Immediately below and on the extreme left is a diagram of the cam slot gear which controls the trailing-edge flap pull-and-push rod. This gear is controlled by the torque tube running right through the leading edge of the wings, which also directly controls the auxiliary aerofoil and opens or closes the leading edge slot.

This auxiliary aerofoil is carried on a series of duralumin members which form part of a parallel link gear. This link gear is shown diagrammatically in the lower left-hand corner, and in perspective in the centre of the illustration. In this case the torque tube is dotted. Only three out of the four members of the link gear are actually shown in these sketches, the fourth is part of a bracket attached to the front spar, which carries the bearings for the torque tube and the pivot for the front link.

On the right is shown the attachment of the rear spar bracing tube to the spar, and one of the duralumin brackets which carry the trailing-edge flaps.

SIR ALAN J. COBHAM'S FAMOUS D.H. 50

in which he made his historic

28,000 MILES AUSTRALIAN FLIGHT

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AN AWARD FOR MERIT.

The Taylor Gold Medal presented annually by the Institution of Aeronautical Engineers for the best and most valuable paper submitted during the Session has this year been awarded to Capt. W. H. Sayers, the Technical Editor of *THE AEROPLANE*, for his paper on wing curves.

In that paper he made the various abstrusities of a number of wing sections, particularly those of the erudite Joukowski, understandable and usable by any theoretical aeroplane designer who possesses a working knowledge of mathematics and an acquaintance with what our technicians are already pleased to regard as the Science of Aerodynamics.

The Staff of *THE AEROPLANE* is honoured by the honour thus conferred on one of its number, and one hopes that by strict attention to business others concerned with this publication may do work which may prove of value to the progress of Aviation.—C. G. G.

THE OWNER-PILOT OF 1910.

Those who own or aspire to own aircraft will be interested in the experience of a famous aviator of sixteen years ago—since deceased. Mr. P. W. Brittain of Norwich has discovered it in *The Daily Mail* of June 6, 1910. The sad story is as follows:—

AIRMAN'S PLEA.

Mr. Douglas G. Gilmour, of Preston Cross, Bookham, was convicted at Woking on Saturday of exceeding the legal speed with his motor-car after leaving his aviation shed at Brooklands, and was fined £5 and costs, Superintendent Marks stating that he had been seven times previously convicted.

The defendant asked for time to pay the fine. Superintendent Marks informed the magistrate that the defendant owned an aeroplane.

The Defendant: That is exactly why I am broke. (Laughter.)

Superintendent Marks: I think he is imposing on the court.

The Defendant: The aeroplane has made me hard up. It costs a small fortune to run the thing.

The Bench allowed three weeks for payment of the fine.

Those who remember Douglas Graham Gilmour will appreciate this reminiscence. D.G., who was one of the finest pilots in the World in his day, was one of those quaint persons, who exist in all ages, who are always broke and yet always have money to spend. As an owner-pilot he was some years before his proper time, and one hopes that his financial experiences related above will not occur to present-day owners.—C. G. G.

DRANG NACH OSTEN.

On Sept. 26, according to *The Times*, a Far East Expedition, organised by the Deutsche Lufthansa A.G., arrived back in Berlin after an absence of two months. During this period it has flown to Peking and back and has thoroughly surveyed the route to be followed by a projected London—Berlin—Moscow and Far East air line.

It is estimated that a regular air service between Berlin and Peking, running in the daytime only, except between Berlin and Moscow, would take five to six days. With night flying the time might be reduced to 2½ days, but that possibility is hardly to be taken seriously at present.

By sea the journey takes six weeks, and by Trans-Siberian Railway 17 days.

With the service reserved exclusively for mails and without considering a subsidy it is roughly calculated that the cost of a single journey would be something over 70,000 marks (£3,500) which, with a pay load of 2,645 lbs., would work out at 1s. 2½d. for a 20-gramme letter, not a very heavy charge for delivery in Peking in six days instead of 17,—that is if anybody wanted to write to Peking in these uncertain times.

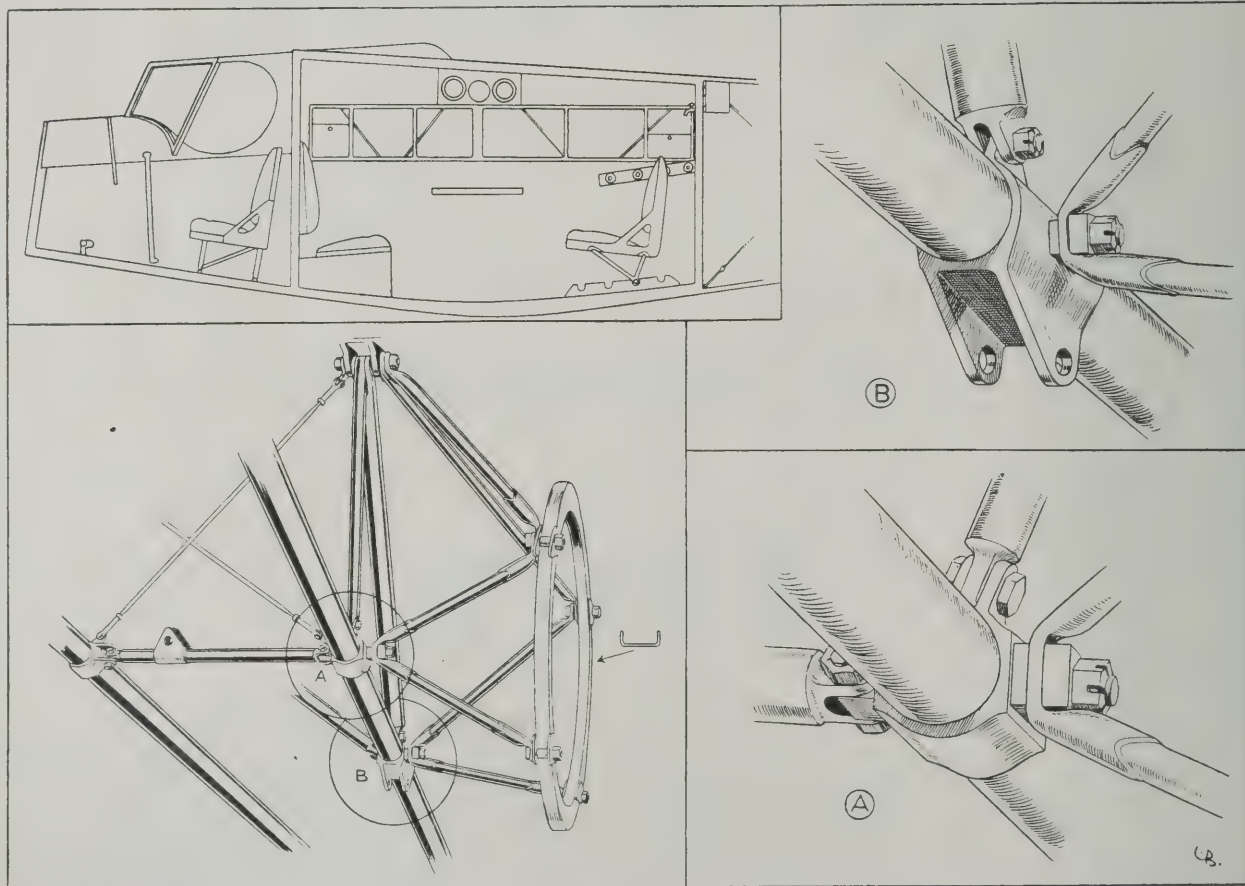
Further investigations and discussions will be carried on between the Deutsche Lufthansa, the Chinese, and the Soviet authorities with regard to the establishment of a regular service, but it is not expected that anything definite can be started before 1929.

Negotiations are now in progress between the Deutsche Lufthansa and the Spanish authorities for the extension of the Berlin—Stuttgart—Zurich—Marseilles air-line to Barcelona and Madrid.

The Berlin—Marseilles route is operated by the Deutsche Lufthansa, the Basler Luftverkehrsgesellschaft, and the Air Union working in conjunction, and it is proposed to form a Spanish company to co-operate with these three companies.

The scheme is to use Dornier Wal seaplanes on the Marseilles—Barcelona section, and Junkers G.23 monoplanes on the Barcelona—Madrid section.

Negotiations are progressing so satisfactorily that a German mission selected to organise the establishment of Spanish aerodromes and other work is leaving for Spain almost immediately.



THE HANDLEY PAGE HAMLET.—Top, left, sectional elevation of pilot's cockpit and cabin. The very complete enclosure of the pilot's cockpit and the ample room given in the cabin are noticeable. Bottom, left the structure supporting one wing engine. This is attached at the top to a fitting on the front wing spar, and at the bottom to two fittings A and B on the front spar bracing tube. A and B, which are shown separately on the right, are tied A to the rear spar bracing spar and B to the rear spar. The telescopic leg of the undercarriage is also attached to fitting B by the large lug which is unoccupied in these sketches.

AWARDS FOR THE AUSTRALIAN FLIGHT.

The Court Circular issued from Buckingham Palace on Oct. 11 contains the following announcement:—

Mr. Alan Cobham had the honour of being received by His Majesty, when the King conferred upon him the honour of Knighthood and invested him with the Insignia of a Knight Commander of the Most Excellent Order of the British Empire (Civil Division).

The announcement of the honour was made by the Secretary of State for Air at the lunch at the Carlton Hotel on Oct. 5, given by the Air Council to Mr. Cobham.

In respect of the same expedition Sir Samuel Hoare announced that Sgt. Ward, R.A.F., would receive the Air Force Medal, and Mr. C. S. Capel the M.B.E.

ENTERTAINING SIR ALAN COBHAM.

AT MANCHESTER.

The promoters of Manchester's Civic Week entertained Sir Alan Cobham to tea on Thursday, Oct. 7. He was to have had lunch but he arrived late because near Nuneaton a particle of soot shorted a spark-plug in the engine of the Moth on which he was flying to Manchester and neither the machine nor the pilot happened to carry a spanner with which to remove the plug. Sir Alan telephoned first of all to the Armstrong-Siddeley people at Coventry for a machine to take him on to Manchester, and as none was available, he had a D.H.9, piloted by Mr. Broad, sent up from Stag Lane.

Sir Alan took the D.H.9 on to Manchester and arrived four hours late. Mr. Broad took out the offending plug, blew on it to remove the offending piece of carbon, put it back again, and flew the Moth home to Stag Lane. Perhaps some of his admirers would like to send Sir Alan a present of a pocket spanner capable of removing sparking plugs. His address, in the telephone book, is 27, Buckland Crescent, N.W.3.

At Manchester he was welcomed by the Lord Mayor. Thereafter, at the Manchester Town Hall and at the Manchester University Union and at the Manchester Hippodrome and at the Palace Theatre, he told the good Mancunians all about Aviation.

The following account of the visit from the point of view of a Manchester aviator will be found entertaining:

It was all through having a Civic Week, for the main object of civic weeks is to draw the crowd and when the City fathers saw the photographs of the crowd drawn by Sir Alan in London they suddenly became "air-minded" and invited him up to Manchester post-haste. So he started on a Moth.

When he was nearly an hour overdue the Lancashire Aero Club got on to D.H.'s by phone and learned that he was down at Nuneaton with plug trouble and that they had sent another machine to take him on. He would reach Woodford, said the message, at 3.30 p.m.

So the formation of Club machines which was to have escorted him took the air in fear and trembling to carry the bad news to the City Fathers, who were waiting on the emergency landing ground at Withington. Mr. Goodfellow landed and remained with his engine running while Mr. Leeming tottered across to the imposing array of civic dignitaries to break the news, with the idea that if anyone started throwing chains of office or other insignia a rapid get-away might be made.

However the attitude taken was that Sir Alan might be missing but the Civic Lunch was there. So Mr. Goodfellow stopped his engine hastily, Messrs. Cantrill and Scholes descended at break-neck speed on their Moths and all was joy and harmony.

As things turned out Sir Alan reached Woodford at 2.30 p.m. and it was only by missing the last course that the formation pilots got back to Woodford in time to greet him. Here he was given a Club Lunch of beer and sandwiches, while tactless members showed him the menu of the Civic Lunch and a press representative, old enough to know better, propounded the riddle "What happened to Sir Alan's lunch?" Answer, "Nun-eaton."

Meanwhile, arrangements for the postponed arrival were being made at Withington. In this connection a member of the Club explained to a high official that owing to the direction of the wind Sir Alan would have to land over the heads of the crowd and taxi back from the far end of the ground. "Taxi," exclaimed the official, royally, "Nonsense. We will send our own car for him." Oh! this air-mindedness!

Punctually (this time) at 16.00 hours Sir Alan appeared on a D.H.9, escorted by the Gosport and Moths, and landed amid tremendous enthusiasm from a crowd ten or twelve thousand strong. A cordon of over 500 police kept the ground clear—to the relief of the escort, which was able to land in safety.

There followed a procession to the Town Hall through streets lined with spectators, while in the square before the Town Hall not a foot of space was vacant and the crowd was enormous. After advising them all to learn to fly, and explaining that a missing box-spanner had caused all the delay, Sir Alan was led inside for a Civic reception and tea, follow-

ing which he had to make another speech or two, and got in a few home truths in a very tactful manner.

Ultimately he was rescued at 7.30 for a quiet, un-Civic Dinner with the Directorate of A. V. Roe and Co. (including A. V. himself) and the Committee of the Lancashire Aero Club. Incidentally he made the best speech one has ever heard from him,—a little informal talk on the organisation of the flight.

And so to bed—on the midnight train. One can only hope that his visit has done at least as much good to Manchester as all the decorations of her Civic Week:—MANCUNIAN.

THE OVER-SEAS LEAGUE.

On Friday, Oct. 8, Sir Alan was entertained at lunch by the Over-Seas League, with Air Vice-Marshal Sir William Brancker in the Chair, where he told some five hundred Imperially-minded people what Aviation could do for the Empire.

Incidentally Sir William Brancker made known the interesting facts that there are 31,000 miles of organised air routes in the World of which the British have only about 6,000, and that last year commercial aircraft covered 14,500,000 miles, of which total British aircraft only covered 1,300,000. Which is not good enough for a great Empire like ours.

THE AERONAUTICAL ENGINEERS.

On the evening of Oct. 8, Sir Alan was entertained by the Institution of Aeronautical Engineers, with the Chairman of the Institution, Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., in the Chair. The Dinner, which took place at Kettner's, was organised by the Acting Honorary Secretary of the Institution, Mr. N. J. Hulbert, who deserves hearty congratulations on the success of the Dinner and on his excellent staff work.

Excellent speeches were made by Colonel Brabazon, Sir William Brancker and Lord Thomson, three of the best after-dinner speakers one has ever heard. One bright member of the audience remarked that Lord Thomson enjoys every word he says—which is quite different from the man who merely likes to hear himself talk.

Sir Alan, realising that he was among people who really knew something about aviation, talked practical flying, and remarked that the wing-section of the machine which he flew to Australia and back was designed in 1916, which in his opinion proved that there were some aeronautical facts which did not alter. To which one would reply that some people, on the other hand, might argue that it was time we made a bit more progress in aerodynamics.

Also Sir Alan said that people who were waiting for some patent machine in which they can land in their back garden will have to go on waiting. With which sentiment one cordially agrees.

THE ALBERT HALL.

On Sunday, Oct. 10, Sir Alan entertained quite a large audience at the Albert Hall and told them all about Aviation and the Sir Charles Wakefield Flight to Australia and back, with the help of a large map fixed on the orchestra.

THE INSTITUTE OF TRANSPORT.

The Council of the Institute of Transport has been pleased to confer its Aviation Gold Medal (the donors of which are Sir Henry White Smith, C.B.E., and the Bristol Aeroplane Co. Ltd.) on Sir Alan in recognition of his noteworthy services to the development of Empire air communications. The presentation will take place at a meeting of the Institute to be held in the Lecture Theatre of the Institute of Electrical Engineers on the Victoria Embankment at 5.30 p.m. on Tuesday, Oct. 19.

After the ceremony a lecture will be delivered by Mr. F. L. Barnard of Imperial Airways Ltd. on "Commercial Flying," illustrated by lantern slides. A limited number of tickets will be available for visitors and can be had by applying to the Secretary, The Institute of Transport, 15, Savoy Street, W.C.2. Mr. Barnard will be well worth hearing, for there is nobody who has had greater experience of real commercial flying, and he has a humour that is all his own with which to point his morals and adorn his tales.

THE R.A.E.S.

The Council of the Royal Aeronautical Society have decided to hold a reception on Monday, Oct. 25, at 8.30 p.m., in the King Edward VII Rooms, Hotel Victoria, Northumberland Avenue, W.C.2, at which Sir Alan Cobham, K.B.E., will give an address illustrated by lantern slides, on his recent flight.

The Dominion Premiers and other delegates to the Imperial Conference will be present. A buffet will be provided, and the Royal Air Force String Band will play. Ladies may be invited.

Tickets price 5s. each may be obtained by members for themselves and their guests from the Secretary, The Royal Aeronautical Society, 7, Albemarle Street, W.1.

AN EXPLANATION.

Those who are perturbed because pioneers of flying receive no official recognition, and have difficulty in explaining

to themselves, or anybody, why a Knighthood was conferred on Mr. Cobham, will find the explanation in the 20th Chapter of the Gospel according to St. Matthew,—verses 1 to 16.

As perhaps copies of the New Testament are not standard equipment in R.A.F. Messes, in the Royal Aero Club, and in aircraft offices, it seems well to quote the appropriate passage, which reads as follows:—

For the kingdom of heaven is like unto a man that is an householder, which went out early in the morning to hire labourers into his vineyard.

And when he had agreed with the labourers for a penny a day he sent them into his vineyard.

And he went out about the third hour, and saw others standing idle in the market-place.

And said unto them; Go ye also into the vineyard, and whatsoever is right I will give you. And they went their way.

Again he went out about the sixth and ninth hour, and did likewise.

And about the eleventh hour he went out and found others standing idle, and saith unto them, Why stand ye here all the day idle?

And they say unto him, Because no man hath hired us. He saith unto them, Go ye also into the vineyard; and whatsoever is right, that shall ye receive.

So when even was come, the lord of the vineyard saith unto his steward, Call the labourers and give them their hire, beginning from the last unto the first.

And when they came that were hired about the eleventh hour, they received every man a penny.

But when the first came, they supposed that they should have received more; and they likewise received every man a penny.

And when they had received it they murmured against the goodman of the house,

Saying, These last have wrought but one hour, and thou hast made them equal unto us, which have borne the burden and heat of the day.

But he answered one of them, and said, Friend, I do thee no wrong: didst thou not agree with me for a penny?

Take that thine is and go thy way: I will give unto this last even as unto thee.

Is it not lawful for me to do what I will with mine own? Is thine eye evil because I am good?

So the last shall be first and the first last: for many be called but few chosen.

The only point at which the parable, or parallel, fails is in the fact that the pioneers have not had their pennies. Still Sir Alan Cobham has worked mighty hard during his eleventh hour and thoroughly deserves all he has got or is likely to get in the way of rewards. So good luck to him.

—C. G. G.

Why We Are Very Young.—IV.

GOOD SIR ALAN JAY.

(With humble obeisances to A. A. Milne and Sir Brian Botany.)

Our Alan had an Avro with two big seats in,
He went among the villagers and took them for a ride,
On Wednesday and on Saturday, but mostly on the latter day
He called at all the cottages and this is what he cried:

I am Sir Alan? Not yet!
I am Sir Alan? Who's he?
I don't come to rob 'em. I'm just Mr. Cobham
Plain Mr. Alan J. C.

Our Alan had a D.H.9 with Siddeley Puma,
A taxiplane on which he made some very lengthy flights
On Saturday and Sunday and occasionally on Monday
He'd collect the wealthy tourists and go and see the sights.

I am Sir Alan? Perhaps
I am Sir Alan? One day!
I am Sir Alan, with petrol by the gallon,
The Public must be kept au fait!

Our Alan went a journey and he found a lot of eagles,
They flew at him and fought him and they blipped him on the head,
But nothing made him fail to wire *The Daily Mail*,
And they pushed him and they boomed him and this is what they said:—

You are Sir Alan! Don't laugh:
You are Sir Alan! Don't cry;
You are Sir Alan, and don't mind the eagle's talon.
Sir Alan, A gallon! Fly High!!

Our Alan flew away again, but this time with a Jaguar
Our Alan hurtled off again upon another flight.
He flew off to Westphalia and then right to Australia,
And he goes about the Empire as Sir Alan J., the Knight.

I am Sir Alan! What fun.
I am Sir Alan! He, he!
I am Sir Alan, and use petrol by the gallon,
And so now I am Sir Alan J. C.

—G. D.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Oct. 10.

Total flying time 38 hrs. 20 mins.

Weather prevented any flying on Saturday.

The following members had dual instruction:—H. Spooner, S. H. S. Garne, A. F. Beauchamp, A. J. Richardson, W. L. S. McLeod, T. C. Angus, A. L. A. Petty, S. C. Richards, G. N. Howe, J. G. Crammond, R. A. St. John, H. R. Godfrey, C. H. Tutt, P. W. Hoare, H. F. Wight, E. A. Lingard, T. C. Elford, Lady Bailey.

The following members made solo flights:—Miss O'Brien, O. J. Tapper, S. H. S. Garne, W. Roche Kelly, E. S. Brough, Lady Bailey, W. Hay, R. C. Presland.

Joy-rides were given to the following members:—A. J. Symmonds, Miss M. Webb, E. S. Brough.

G-E-B-L just returned from the works after its crash on Sept. 17, has again been involved in a further episode. S. H. S. Garne, flying solo, misjudged his landing with the result that the undercarriage, wings and fuselage were considerably damaged.

T. H. O. Richardson passed the tests for his Aviator's Certificate on Oct. 6, flying his own Avro.

The Lancashire Aero Club.

Report for week ending Oct. 8.

Bad weather, staff holidays and Manchester Civic Week cut down the available flying period to 3½ days.

Total time for week 33 hrs. 45 mins., made up as follows:—

Dual with Mr. Stack:—Leigh, Crosthwaite and Lilley, 20 mins. each.

Dual with Mr. Cantrill:—Abdulla 1 hr. 10 mins., Nelson 50 mins.,

Anderson 45 mins., Birley 40 mins., Cowan, Smith and Goodyear

30 mins. each, Stern 25 mins., Barnes, Leigh, Newton, S. Birley, Wade

and Blagden 20 mins. each, Hope, Cohen and Slayden 15 mins. each,

Hampson 5 mins.

Dual with Mr. Scholes:—Nelson 40 mins.

Solo and/or with passengers:—Stack 4 hrs. 15 mins., Leete 3 hrs.

50 mins., Leeming 2 hrs. 30 mins., Costa 2 hrs. 25 mins., Lacayo

1 hr. 40 mins., Scholes and Agar 1 hr. 25 mins. each, Cantrill 1 hr.

20 mins., Hampson 55 mins., Goodfellow 1 hr., Michelson 30 mins.,

Hardy 20 mins., Williams 15 mins.

Joy-rides.—Mrs. Jones, Mrs. Bailey, Miss Nuttall, Miss Littley, Messrs. Irwin, Birley, Corbishley, Lacayo, Williams, Leeming Mathews, and Chapman.

Tests occupied 2 hrs. 10 mins.

In connection with his Civic reception at Manchester, Sir Alan Cobham landed at Woodford on Thursday, where he was entertained by Avro's and the Club and subsequently escorted to the emergency landing ground in the city by a formation of Club machines. (Two Moths, piloted by Cantrill and Scholes, and the Avro Gosport, piloted by Goodfellow.)

It will be noted that the Gosport has been "tamed." The Renault-Avro went unserviceable at the last minute, so Mr. Goodfellow promptly took the air on the Gosport with the aid of about 3½ cylinders and plenty of confidence. He reported subsequently that the engine was really an unnecessary luxury anyway as, once off the deck, the Gosport will fly entirely on its reputation.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Oct. 10.

Gales, rain and magneto troubles have curtailed the amount of flying which might have been possible in view of the large attendances of members throughout the week.

Total flying time 23 hrs. 20 mins. Dual 13 hrs. 25 mins. Solo

5 mins. "A" pilots 8 hrs. 55 mins. Tests 10 mins.

The following members flew under instruction with Mr. Parkinson:—J. D. Irving, Miss C. R. Leathart, J. M. Kennedy, E. C. Kennedy, J. N. Charlton, R. Whitfield, D. Matthews, M. Bainbridge, H. Ellis, J. D. Bruce.

The following members flew solo and with passengers:—C. Thompson with Mrs. Heslop, W. Baxter Ellis with Mrs. Ellis, R. N. Thompson, F. H. Phillips with Mrs. Anderson, Dr. H. L. B. Dixon with Dr. Hume, Lord Ossulston with Mrs. W. B. Ellis and Whitfield.

Mr. Warner and Councillor W. B. Ellis flew with Mr. Parkinson. On Monday Lord Ossulston with Mr. Whitfield as passenger in one machine, and Mr. F. H. Phillips in the other, flew to Chillingham Castle, landed for tea and returned to the aerodrome.

On Friday, Mr. Heppell and Lord Ossulston left the aerodrome at 7.0 a.m. and flew to Chillingham, where they landed. Later they flew to Edinburgh. Mr. Heppell returned alone, making the journey in 53 minutes.

On Thursday Mr. H. Ellis made his first solo flight, which was a very creditable performance with an excellent landing.

The Midland Aero Club.

Report for week ending Oct. 9.

Total flying time 5 hrs. 27 mins.

The following members were given dual instruction:—S. H. Smith, J. Brinton, A. B. Gibbons, H. Smith.

The following members made solo flights:—R. L. Jackson, E. R. King, G. V. Perry, E. J. Brighton, J. Brinton.

On Sunday Mr. E. R. King made the necessary qualifying tests for his "A" Licence.

The Club has now completed one year's operations as one of the six flying Clubs approved by the Air Ministry. The distinction of having been the first Provincial Aero Club in this country belongs to the Midland Aero Club, which was founded as far back as Sept. 3, 1909, with a membership of 25. Those who remember the early days of flying will recall that the Club organised and carried to a successful issue the first All-British Aviation Meeting at Dunstall Park, Wolverhampton, in 1910.

With the advent of the 1914-8 War, Club activities practically ceased, but with the inauguration of the Air Ministry Light Aeroplane Scheme interest soon revived.

During the past year two D.H. Moths have provided the flying material. G-E-B-L has done 215 hours, and G-E-B-LW has done 243

hour, which represents a total mileage flown of about 33,000.

It is very satisfactory to be able to place on record the fact that

there have only been five forced landings, one from mechanical

44,000 Trouble - free Miles.

MANY people may not realise that the same Armstrong-Siddeley engine fitted to Sir Alan Cobham's De Havilland aeroplane was flown both in his 28,000 miles England-Australia-England flight just completed, and in his flight to the Cape and back last winter.

Thus, this engine has covered in these two flights alone 44,000 miles, passing through the intense heat of the Equatorial zone four times.

Undoubtedly the lubricant used throughout these flights contributed to the engine's trouble-free running. It was a standard grade of —

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(TWO 450 H.P. NAPIER LION ENGINES.)

AS AN EXAMPLE OF WIDE RANGE OF DESIGN, CONTRAST THE ABOVE TWIN ENGINED MACHINE WITH THE SUPERMARINE NAPIER S4 MONOPLANE DESIGNED AND CONSTRUCTED FOR THE SCHNEIDER CUP RACE, 19.5.

SUPERMARINE

ENGLAND.

defect, three from loss of direction, and one through the pilot stopping the airscrew in the air.

The damage to aircraft during the year has been exceedingly small,—two undercarriage bracing cables, one undercarriage radius strut, and two airscrews. One airscrew was broken when the aeroplane collided with a reaping machine while taxiing, and the other as the result of running into a hedge after a forced landing in a small field. In each case the machines were in the hands of pupils. This entire absence of any serious crash reflects considerable credit on the high standard of the instruction given by Mr. McDonough, who has been solely responsible for all the instructional work, and Mr. W. J. Halland, whose excellent aircraft maintenance has always been at a very high level.

The Hampshire Aeroplane Club.

Report for week ending Oct. 7.

Total flying time 14 hrs. 38 mins. Instruction flying 12 hrs. 30 mins.
Passenger flying 1 hr. 23 mins. Solo flying 45 mins.

The following members received instruction:—Miss Home, Messrs. Perfect, Moloney, Bound, Courtney, Stokes, Dickson, Appleford, Nicholson, Dartnall, Sommer, Kerry, Everett, Cooper, Dobson, Van den Bergh.

The following members received joy-rides:—Miss Timson, Mrs. Cook-Hurle, Mrs. Morton, Messrs. E. O. Smith, and Alexander.
Messrs. S. Fry, K. P. J. Bowen and Flt. Lt. Crawford flew solo.
"Gee Roy" having completed one hundred hours' flying time is now having its overhaul, and will be ready for the air again within a few days.

The Southern Aero Club.

Little is heard of the Southern Aero Club, but despite numerous hardships and difficulties it continues to progress. Recently it was reorganised and a new aerodrome was obtained next to the old Shoreham aerodrome of war time fame. Mr. Pashley is the chief instructor, and uses his 80 Le Rhône dual-control Avro for instruction.

Mr. Miles—a member of the Club who has taken his licence—has purchased a dual-control 110 Le Rhône Avro, which is also used for instruction. The charges for dual are £2 10s. an hour for members. A Besenon hangar has been purchased and is in process of being boarded in. The gale of Saturday was nearly disastrous to the Club. Several members had arrived by 10 a.m. to see if everything was correct, and to their dismay saw the hangar about to collapse.

Among them was Miss Birkett, a member of the Club, who has recently purchased an Avro in partnership with another member. This machine had been flown down the night before and was being housed at the aerodrome. It was obvious to all concerned that the only hope of saving the machines was to get them to the middle of the aerodrome and peg them down. The first machine was under the greatest difficulty taken by six members out of the shed—at one time the machine was perched at an angle of 45 degrees with the ground and balancing on one wing; however, after about half an hour's battle with the gale this machine was safely moored, the only damage being to one wheel.

Luckily the gale moderated while Mr. Pashley's and Mr. Mills's Avros were removed—they only suffered very slight damage.

A large tent used as a hangar was also damaged, while the old Grahame-White box-kite belonging to the Club was completely destroyed. The hangar was greatly damaged, but not beyond repair.

The spirit of the Club is wonderful, as the Club has had no financial support whatsoever, and has been entirely run and maintained by Mr. Miles, Mr. Pashley and Mr. Wallis, who cannot have found it a profitable concern and have put up with the greatest hardships and difficulties.

This sporting spirit is shown in the fact that four members during the gale slept in a shed on the aerodrome during Saturday night to help with the moored machines should they get into difficulties.

Luckily by Sunday the weather had improved, and temporary repairs to the hangar have been made. Flying is therefore progressing as usual on Avros.

Anyone wishing to fly an Avro will do well to become a member of the Club. Particulars can be obtained from Mr. F. Miles, Shoreham Aerodrome, Shoreham-by-Sea. The Southern Railway Co.'s station, Bungalow Town, is actually on the aerodrome, which is about five miles from Brighton.

[N.B.—The foregoing notes were written by a member of another Club, and so are a testimonial and not an advertisement.—ED.]

THE KARACHI AIRSHIP BASE.

The Karachi correspondent of *The Times* in a message dated Oct. 9, states:—

Several hundred people, including many distinguished guests, witnessed an interesting ceremony this evening on the site of the airship base at Drigh Road, about nine miles from Karachi City, when the first piece of steel structural work for the new airship shed was hoisted into position from a gantry 200 ft. high and was bolted to a solid concrete bed.

The ceremony was performed by Mrs. T. C. Frampton, wife of the agent of the Armstrong Construction Company, who, after unfurling a Union Jack, tightened the first silver-plated nut connecting the column with its concrete bed. She broke a bottle of champagne over the site and declared the new structure to be "well and truly laid."

A Royal Air Force band then played the Royal Air Force March, after which the crowds inspected the site. The chief engineer, Mr. H. M. Wallace, presented to Mrs. Frampton a silver-plated nut made into a paper-weight as a memento of the important occasion.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 11; Tuesday, 13; Wednesday, 15; Thursday, 14; Friday, 14; Saturday, 7; Sunday, 10

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin. Machines 43, passengers 265, freight 13 tons

AIR UNION:

Paris—London: Machines 19, passengers 53, freight 11½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 15, passengers 29, freight 1 tons.

SABENA:

Machines 6, passengers 6.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 9, passengers 9.

PRIVATE:

Machines 7, passengers 10.

Total number of trips by British Machines, 59, carrying 275 passengers. Foreign Machines, 34, carrying 93 passengers.

Comparative Figures:

Week ending Oct. 10:

Machines, 84; Passengers, 367; Crews, 103; Total personnel, 470.

Corresponding week, 1925:

Machines, 95; Passengers, 369; Crews, 121; Total personnel, 490.

Corresponding week, 1924:

Machines, 111; Passengers, 466; Crews, 137; Total personnel, 603.

Corresponding week, 1923:

Machines, 66; Passengers, 132; Crews, 89; Total personnel, 221.

Corresponding week, 1922:

Machines, 101; Passengers, 305; Crews, 163; Total personnel, 468.

Corresponding week, 1921:

Machines, 80; Passengers, 214; Crews, 109; Total personnel, 323.

Corresponding week, 1920:

Machines, 125; Passengers, 196; Crews, 143; Total personnel, 339.

Croydon Notes.

The gales of the past week have seriously interfered with the regular running of the various air lines. Nevertheless those who crossed the Channel by air on Saturday and Sunday had a very much pleasanter trip than did those who made the surface passage.

The accident to the Air Union Blériot has not had such an adverse effect on the bookings as was feared. One heard that a number of bookings had been cancelled, and the actual number of passengers carried by the Air Union was 53 in comparison with 98 the previous week. This one imagines was largely due to the appalling weather.

The W.10, G-EBMR, en route from Brussels to London on Sunday, was damaged in a forced landing due to a broken oil pipe. Mr. Robinson and Mr. Warner were the pilots of the machine, but one gathers that Mr. Warner was actually at the control at the time. Thus Mr. Warner carries on the tradition that every new pilot coming onto air line work must have at least one crash. The machine was damaged to an extent which rendered dismantling necessary.

It was reported in the lay press that a D.H.9 belonging to the British Insurance Group was smashed in a forced landing in a garden near Croydon aerodrome. Actually what happened was that Mr. Leslie Hamilton was testing the machine when the engine started missing, and he descended undamaged in a neighbouring field. The trouble, which was due to water in the carburettor, was soon rectified, and Mr. Hamilton flew the machine back to the aerodrome. He left, at 06.00 hours on Tuesday, for Biarritz, to join the Lowenstein Air Line.

There is a certain well-known pilot who for a long time was flying on the regular air lines. Three or four years ago he joined an aircraft firm and has been flying regularly ever since. Recently he applied to Imperial Airways Ltd. to return to air line work but was told that he could not be taken on owing to the fact that there was a waiting list of pilots.

Many of these are, naturally, without experience of air-line work. And as training pilots new to air-line work is sometimes expensive, one cannot help thinking that Imperial Airways would do well to take on an air line pilot of experience with a good insurance record rather than others with neither.

The Emir Feisal, son of our old friend (and enemy) Ibn Saud, Sultan of Najd and now King of Hejaz, and his suite visited the aerodrome on Wednesday of last week. They were taken for a flight over London in an Argosy. The Emir Feisal had an opportunity of seeing London at close quarters

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and London had an opportunity of seeing and hearing the Argosy.

It is reported that about 60 Service aircraft are to be present on Saturday week at Croydon at the jamboree staged for the benefit of the Dominion Prime Ministers. There is to be a large public enclosure but one is uncertain at the moment whether this is to be free or not.

At a later date this season one gathers that there is to be an official ceremony for the laying of the foundation stone of the new aerodrome buildings. One always thought that the laying of the foundation stone preceded the building. But evidently this is not to be, for the photograph published in last week's *THE AEROPLANE* showed the buildings well on the way to completion.

One warned Uncle Dick of *The Daily Mirror* last week of the risk he was taking in sending Pip, Squeak and Wilfred round the world in a French aeroplane with a French pilot. The warning was justified, as the pets are at the moment of writing marooned in the African Jungle, because the pilot, Uncle Bonbon, left the spare tin of petrol in Morocco. No doubt worse things will follow and possibly Uncle Sir Alan will have to be despatched in charge of a relief expedition.—C. D.

AN ANGLO-GERMAN DEAL.

The good fellowship existing between British and German Aviation concerns is shown by the arrangement concluded between Imperial Airways Ltd. and the Deutsche Luft Hansa. From Saturday next Imperial Airways will cease to operate on the London—Amsterdam route and by arrangement the Luft Hansa will operate this route.

All passengers booking by Imperial Airways will be carried on German machines which, like the Dutch, are built to a standard of safety which would almost satisfy our Aeronautical Inspection Department and Stress Experts. The pilots of all three nations are equally steady.

This is the first result of the removal of the outrageous Nine Rules of the Versailles Treaty, by which the French hoped to ruin German Aviation.

THE R.A.A.F. PACIFIC FLIGHT.

On Sept. 29 Group Capt. R. Williams, D.S.O., O.B.E., Chief of the Australian Air Staff, who, together with two officers and a mechanic, is making a flight through the Southern Pacific Islands to Samoa and back on a D.H.50 seaplane (250 h.p. Puma engine), left Sydney for Brisbane. He was forced to alight in the open sea six miles south of Southport, Queensland, with slight mechanical trouble. High

seas prevented him from taking off again, and the machine, which apparently suffered little damage, was eventually beached.

On Oct. 5 he resumed his flight from Southport at 08.15 hours and arrived at Gladstone at 13.15 hours.

On Oct. 6 he left Gladstone at 07.00 hours. He alighted at Mackey at 10.15 hours, left again at 11.00 hours, and reached Bowen at 13.10 hours.

On Oct. 8 he arrived at Cooktown, Queensland.

On Oct. 10 he reached Thursday Island, and on Oct. 11 left for Port Moresby, New Guinea.

PARIS—RABAT BY NIGHT.

On Sept. 9 Lieut. Girardot and Lieut. Cornillon left Le Bourget at 19.35 hours on a Breguet XIX biplane (450 h.p. Lorraine-Dietrich engine) to fly non-stop to Rabat. They landed at Rabat at 06.00 hours on Sept. 10.

The object of the flight was to make experiments in night navigation by directional wireless. During the whole flight throughout the night they were in constant radio communication with Viry-Châtillon, Bordeaux, Toulouse, Algiers and Casablanca stations, the machine sending in Morse and receiving in telephony.

DR. ZDENKO LHOTA.

On Oct. 9 Dr. Zdenko Lhota was killed at Rome while taking part in the competition for the *Coppa d'Italia*.

Dr. Lhota was probably one of the best known of the small band of brilliant Czecho-Slovak pilots. He was an amateur who flew for the love of flying, and during the past few years has made a large number of long-distance tours, mainly through southern and south-eastern Europe, which have done much to help Czecho-Slovak aviation in general and the Avia Company, whose machines he always flew, in particular.

In addition he participated in the 1925 *Coppa d'Italia* on an Avia B.H.II gaining second place to another machine of the same type, and this year he won the *Concours des Avions Economiques* at Orly, also on an Avia B.H.II.

By his death Czecho-Slovakian aviation has lost one of its most brilliant pilots and one who has done much to popularise the small, and economical type of aeroplane for which there is such a growing demand. One extends the sympathy of all British aviators to our friends in Czecho-Slovakia, especially to his colleagues, MM. Bondy, Benes and Hajin on the death of Dr. Lhota.—L. B.

7TH YARMOUTH RE-UNION DINNER

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PERSONAL NOTICES.

DEATHS.

HAUG.—On Oct. 8, at Kenley, Surrey, as the result of a flying accident, S.M. Erik Gutzeit Haug, No. 56 (Fighter) Sqdn., R.A.F. Serjt. Major Haug was a Norwegian pilot who came into the R.A.F. from the Norwegian Air Service just after the War, 1914-18, apparently under a scheme which was then being tried for bringing in a certain number of pilots from Allied Nations. After a course of training in England he went to Palestine, where he was appointed to 14 Squadron as a Warrant Officer 1st Class.

There he became very popular with all ranks, for his daring as a pilot and his general keenness endeared him to everybody, so much so that when he was posted for Home Service he was given a dinner by the Sergeants' Mess and sundry senior officers came in to bid him farewell.

His many friends in the Palestine Command will learn with sorrow of his untimely death, which occurred during night-flying practice.

NICHOLLS.—On Oct. 5, at Peshawar, India, as the result of a flying accident, on Oct. 1, Philip Hedgeland Nicholls, Flg. Off., No. 20 (Army Co-operation) Sqdn., R.A.F.

Mr. Nicholls entered the R.A.F. with a S.S. comm. on July 16, 1924, and was posted to No. 2 F.T.S., Digby, for a course of instruction. In June, 1925, he was posted to No. 17 (Fighter) Sqdn., Hawkinge, and in December of the same year he was posted to No. 20 Sqdn. Mr. Nicholls was promoted to the rank of Flg. Off. last February.

FORTHCOMING MARRIAGES.

PERRY-KEENE-WHITE.—The engagement is announced between Mr. T. H. Perry-Keene, R.A.F., second son of Mr. and Mrs. Perry-Keene, of Clewancy, Rednal, and Muriel Foster, youngest daughter of H. L. White, E.D.O., Somerset House, and Mrs. White, of Streatham Hill.

TURNER-GARRATT.—The engagement is announced between Flt. Lt. E. F. Turner, A.F.C., R.A.F., youngest son of Mr. and Mrs. Alwayne Turner, of Eastbourne, and Margaret Elizabeth, daughter of Mr. and Mrs. Richard Garratt, of Holywood, Co. Down.

MARRIAGES

ARMSTRONG-PHIPPS.—On Oct. 9, at Esher, Flg. Off. Gerald Christopher Allan Armstrong, R.A.F., only son of the late Col. Armstrong, D.S.O., and Mrs. Armstrong, of Dunkirk House, Devizes, to Alexia Mary Frances Barré, daughter of Mr. and Mrs. Barré Phipps, of St. Nicholas, Esher, Surrey.

BEAUMONT-RIPLEY.—On Oct. 5, at All Souls', Langham Place, by Air Commodore H. Viener, C.B.E., Chaplain-in-Chief of the R.A.F., Lionel Collins Beaumont, Flg. Off., R.A.F., eldest son of Mrs. Beaumont and the late Capt. D. S. Beaumont, of Guernsey, to Enid Corinne, younger daughter of Mr. and Mrs. Horace H. Ripley, of "Outwood," Surrey.

DE CRESPIGNY-USHER.—On Oct. 7, at St. George's Church, Fovant, Sq. Ldr. H. V. Champion de Crespigny, M.C., D.F.C., A.F.C., R.A.F., to Sylvia Ethel Usher, second daughter of the Rev. R. and Mrs. Usher.

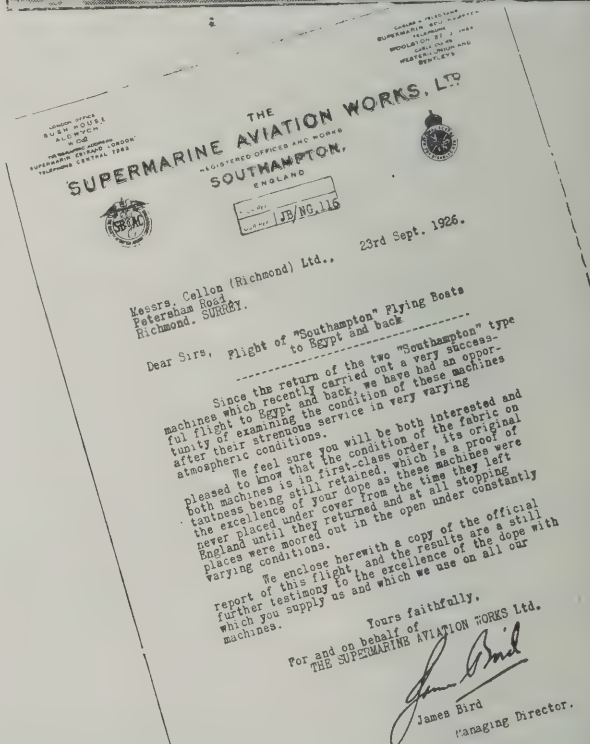
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THE AEROPLANE—OCT. 20 1926.

Some Specification

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. G. G.

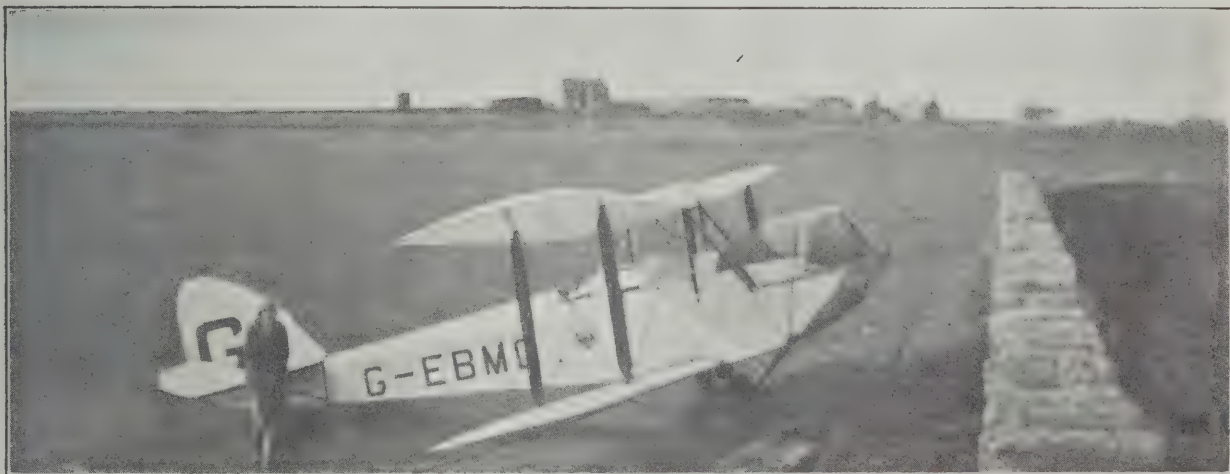
Vol. XXXI. No. 16.

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[Registered at the G.P.O.
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"FROM WEST TO EAST, FROM SOUTH TO NORTH
"SCOTLAND SENT ALL HER WARRIORS FORTH."

SCOTT—Marmion.)



THE END TO END FLIGHT.—The D.H. Moth (Cirrus Mk.II engine) which was flown by Col. the Master of Sempill, East from Land's End and North to John o' Groats. The machine is here seen, with Mrs. Sempill in charge, at the village of Sennen, the most Western habitation in England.

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SEE PAGE 529 FOR PALMER LANDING WHEELS AND TYRES.

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1926.

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ON LEARNING FROM THE EXPERIENCE OF OTHERS.

One of the reasons why human progress is so slow is that people will not learn from the experience of others. Sometimes we learn wisdom, in time, from our own experience. But if only we would learn from the experience of other people our progress would be considerably quicker. And the rapidity of our progress varies considerably with the individual. Some people are quick to profit by their experience, others are slow-witted or merely stupid.

What is true of individuals is equally true of nations. The English as a nation are particularly slow to profit by what is done in other countries. As a nation we are not stupid but we are phlegmatic. We seem to hold by the old adage,—

"Be not the first by whom the new is tried"

"Nor yet the last to set the old aside."

The result is that though eventually we get the best of everything, it takes us an unnecessarily long time to get it. And the process of getting is extremely irritating to those who can see just far enough ahead to have a vision of what it is that we have to have, whether we like it or not.

Moreover, in the process of getting we not only deprive ourselves for an unnecessarily long time of the things we need, but while other people are making them they are also selling them. And so we not only go without the things ourselves but we lose all the profits we might have if we were a bit quicker in the uptake and started making those things not only for our own consumption but for sale to other people.

AN HISTORIC PRECEDENT.

Take the case of the motor car for example. The French and the Germans and the Americans were making and using motor cars for quite a while before we even started making them. For several years after the use of motor cars became legal in this country we bought practically all our cars from France and Germany. We had the Benz and the Canstatt-Daimler from Germany and the Panhard and the De Dion and the Léon Bollée from France long before anybody started making motor cars as a business proposition in this country.

Though a certain number of wild enthusiasts did make a few cars they were very primitive affairs, largely because the makers refused to learn from French and German experience. And the people who made the money out of selling motor cars were those who became agents for French and German and American cars.

Then after some years we began making good solid cars of our own, such as the Rolls-Royce and the Wolseley, and

we began to get a certain share of our own market, but still the bulk of the cars on English roads were of foreign make and we did practically no export trade compared with what was being done by foreign nations.

Next came the American invasion. The American manufacturer had the wit to see that people wanted automobiles completely equipped. And so he started sending out his cars complete with lamps and electric lighting and self-starters and everything that the motor driver could possibly want. But if one bought an English car one had to spend pounds and pounds more on buying lamps and necessary accessories. And for years after that one actually had to have quite a big workshop job done on the engine and the chassis if one wanted a self-starter.

In spite of the fact that thousands of English motorists bought American cars simply and solely because they were fully equipped and practically fool-proof, the English motor manufacturer refused for years to learn from the experience of the American manufacturer and even ignored the evidence that was right under his nose in the person of the English motorist who bought American cars in his thousands. Now at last, thanks very largely to the energy and initiative of Mr. Morris of Oxford, the average English car is very nearly as well equipped as is the average American car with all the things which make motoring more enjoyable.

Because our English cars are better finished and more eyeable than American cars we are gradually getting back our home market, and quite a lot of the business in the British Dominions overseas. But the American maker still keeps ahead of us in quite a lot of gadgety ideas which, though they are not absolutely necessary on a car, are at any rate very attractive.

Still, the English motor manufacturer is really learning something from his own bitter experience.

But if we had only had the sense to learn from American experience some fifteen years ago and had started in after the Armistice in 1918 to follow the best American practice in the design and equipment of our cars, we should be in a very much better financial position than we are to-day. Although the cheaper American cars have been practically pushed off the English roads they still predominate all over the rest of the World. And so the British motor manufacturers have lost the profits of six or seven years of the home markets and have not yet touched the possibilities of the export markets.



THE BOEING PURSUIT BIPLANE.—The latest development of the Boeing P.W.9, fitted with the 425 h.p. Pratt and Whitney Wasp air-cooled radial instead of the Curtiss D.12 water-cooled engine. This machine, which has a very high performance, is at present under test by the U.S. Navy.

A LESSON TO THE AIRCRAFT INDUSTRY.

Now all this ought to be a lesson to the Aircraft Industry. History, as one has said on various occasions, is the greatest plagiarist in all literature. It always repeats itself, though every time with variations.

The Americans were the first to fly and the French were next. We bought French and American aeroplanes in 1909-10-11 just as we bought French cars in 1897-98-99, and up to 1902 or so. The French took all the speed records up to 1912. Then the Avro people produced the World's best training machine, and Messrs. Sopwith and Sigrist produced in the Tabloid the most wonderful performer for its power in its day, and in 1914 they won the Schneider Trophy with its direct descendant.

During 1914-18 we built the machines which had the best performances. But since 1918 we have fallen sadly behind so far as sheer performance is concerned.

And so, although one knows perfectly well that the British Aircraft Industry does make the best aeroplanes, and will eventually do the biggest business in aeroplanes all over the World, one would like to suggest to the Aircraft Industry that it can not only make very much more rapid progress, but can make money much sooner, if it will learn from the experience of other people without waiting to be taught very unpleasant lessons at our expense.

These lessons may come in the shape of the loss of trade which we might have if we were a little quicker in supplying what people want in the way of civil aircraft. Or they may come in the shape of heavy loss of life in the Royal Air Force if, owing to our unwillingness to learn from other people, we find ourselves thrown into the Great War with the obsolete types of aircraft with which the Royal Air Force is equipped to-day.

Moreover one would like to point out that the Great War may be very much nearer than people expect. The present break in the Government of Russia and the feud between the partisans of Trotsky and the partisans of Stalin is regarded by people who know a good deal as being the equivalent to the affair of Thermidor in 1794, when Robespierre and the Jacobins were deposed and executed, and the Directorate came into being which gave Napoleon Bonaparte his opportunity. And one is told that there is in Russia to-day a certain soldier, whose name is unknown in this country except to the knowledgeable few, who is seriously considered as the Russian Bonaparte.

WHAT AMERICA HAS DONE.

For all these reasons one feels justified in devoting a goodly portion of *THE AEROPLANE* this week to publishing in full a specification of the latest single-seater airplane required by the Government of the United States. For this specification one is indebted to an aircraft designer who has a singularly complete knowledge of the aircraft of all nations.

One recommends that this specification should be closely studied not only by the design staffs of all our aircraft factories but also by those officers and men of the Royal Air Force who take a close interest in the aircraft on which their lives will depend in the next war.

The specification shows that same astonishing attention to detail in its relation to the comfort and safety of the

pilot that is shown to the comfort and convenience of the driver by designers of American motor cars. And one believes that anybody who studies the specification will admit that we have not in this country a machine which comes very near fulfilling the specification.

If one discusses the specification with our own designers one will certainly be told that they could design machines up to it if they were given a free hand by the Air Ministry. And if one discusses it with the technical people at the Air Ministry one will probably be told that that is exactly the thing they would like to have if only our designers and constructors were willing to produce it.

One has been told by Air Ministry officials that they would welcome new and improved aeroplanes which were the result of original thought in our aircraft factories, and that the specifications which are sent out by the Air Ministry are merely issued as a guide to designers. On the other hand, one has been told by aircraft constructors that so long as they stick strictly to the Air Ministry specifications they cannot be blamed if their machines are not up to the performance of the best American and French machines,—in other words they prefer to shelter behind the Air Ministry specifications in case their design staffs let them down.

Possibly, after studying the specification in detail, some designers will say that no machine can be produced to fulfil the specification. The answer to that quite simply is that the Americans have already got such machines. It is in fact to all intents and purposes the specification of the standard single-seat fighter, or pursuit ship, used by both the U.S. Naval Air Service and the U.S. Army Air Corps, and known in the U.S. Army as the P.1 type. It has been developed from the Curtiss P.W. 8 of two years ago merely by a process of refinement.

AMERICA'S RISE.

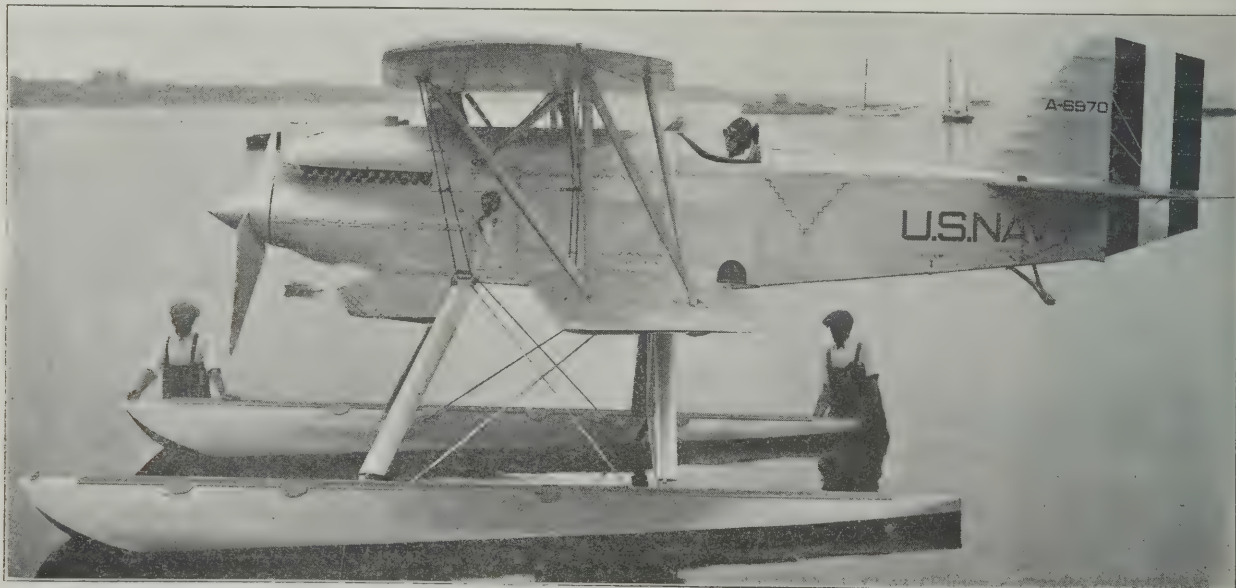
The rapid rise of American aircraft since the War 1914-18 has been due to strict and merciless insistence on the figures specified for weight and performance. If a manufacturer has failed to fulfil the specification, or if, by way of sheltering himself against the discovery of his own incompetence, he has asked just how the U.S. Authorities want a certain job done, he has simply been told to go home and read the book in which the specification is issued and to come back when he has fulfilled the specification.

During the War American aircraft were a joke, except when they were a tragedy. America spent millions of pounds on manufacturing aircraft during the War and not one single American aircraft ever crossed the fighting line.

When America joined us in the War we sent to America all our very best aircraft designs, together with quite a number of competent people to show the Americans how to build the machines. And the Americans, always ready to learn, took our designs and our advice and set to work wholeheartedly to build war machines.

They made a hopeless hash of their first efforts. But they learned from our experience and they learned from their own mistakes in a fraction of the time which we should have taken under similar circumstances.

After the fighting was over they still went on building to the designs which we had sent them. And the standard



THE CURTISS HAWK (F.6C-2) SEAPLANE.—The standard pursuit seaplane of the U.S. Navy. With the Curtiss D.12 engine the Hawk seaplane has a top speed of 159 m.p.h. at sea level, 138.7 m.p.h. at 15,000 feet, an alighting speed of 65.4 m.p.h., climbs to 15,000 feet in 15.6 mins., and has a service ceiling of 18,100 feet.

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general purpose machine in the U.S. Army Air Corps to-day, and on that wonderful trans-Continental air mail line, is still the De Havilland 4 with a Liberty engine. But, while they have been carrying on with our old designs, they have worked steadily on their own designs.

The result has been that two years ago, after six years of pretty hard work, they had produced the P.W.8, which as a single-seat fighter is still far in advance of anything of its power in this country, with the sole exceptions of the Fairey Firefly and the Avro Avenger, both of which frankly owe a great deal to Curtiss ideas and have been built entirely free from Air Ministry interference.

The progress made in America in the past three or four years has been duly reported from time to time by those whose duty it has been to watch American progress. But from various conversations with designers and constructors in this country one is convinced that the information which has reached this country has never been distributed among those to whom it should be of vital importance, namely, the designers and the design staffs of our aircraft factories.

The knowledge may be stored up in pigeon-holes at the Air Ministry or in individual minds of Air Ministry officials who hope some day to use it for their personal advantage. Some of it may have been distributed to the Aircraft Industry by the particular department of the Air Ministry whose duty it is to distribute such information, and perhaps it may have been neglected by the Industry. Possibly chief designers may have kept it to themselves and may not have taken the trouble to distribute it among their subordinates.

At any rate one is certain that the junior members of the design staffs of our aircraft factories do not know what the Americans demand from their constructors—and get. Still less do the pilots of the Royal Air Force know what their opposite numbers in the States are getting.

AMERICAN METHODS.

The methods by which the American Flying Services have produced these extraordinary machines may be divided under four heads.

(A) They concentrated after the War on assuring accessibility to all parts of the engine and aeroplane and armament.

The idea was to keep the machine in the air for the greatest number of hours with the least possible number of hours spent in maintenance work on the ground. Their slogan was "Maximum air hours with minimum work hours." That is to say, they aimed at changing engines, guns, tanks and so forth not only as quickly as possible but as simply as possible.

Their whole aim was to make their machines fool-proof, bearing in mind the fact that though they might produce the necessary number of skilled mechanics to maintain the machines perfectly in time of peace they would have to enlist in time of war a vast number of men, who, though passably good mechanics, would be quite ignorant of aircraft work. Out of any hundred thousand mechanics they could not expect to have more than ten thousand skilled men against ninety thousand who would be quite ignorant of aircraft. Consequently everything in the specification is based on the idea that the machines will have to be maintained on the ground by unskilled men.

(B) Having achieved almost complete fool-proofness the directing brains of the Flying Services proceeded to specify refinement in design, with the idea of attaining high performance.

This line of development showed itself when the Army and Navy Air Services began competing against one another for speed records, and the American manufacturers produced under their pressure the various racing machines which have taken part from time to time in the great international com-

petitions—machines such as the Wright and the Thomas and the Verville and, pre-eminently, the Curtiss.

(C) Having got their accessibility and high performance the authorities then began to work for high factors of safety.

Lieut. James Doolittle, U.S. Army, the famous American racing pilot, who happens to be so constructed internally that he can stand physical strains which would probably lay out unconscious ninety-nine out of a hundred pilots, found out, with the aid of accelerometers, that he could get seven and a-quarter times the normal flying loads onto the structure of his machine in high-speed turns and dives. At that time the factor of safety on which the American Services insisted was only eight, which on such showing was obviously inadequate.

Consequently the all-round factor of safety on the American machines was raised to twelve. And in certain parts it is sixteen.

(D) The fourth stage, that at present in progress, is the refinement of existing types.

The policy of the Services is rather to avoid the introduction of radical changes in type and to get better and better performance while at the same time simplifying the machines and everything in them. That is to say, the Services have practically adopted that amusing slogan invented by Mr. Bill Stout of Detroit, and displayed all over the works of the Stout Metal Airplane Company, "Simplify and add more lightness."

A simple example of what has already been achieved by this process is to be found in the Curtiss Hawk, the standard pursuit ship developed from the Curtiss P.W.8 of two years ago. The wing radiators have been abolished in favour of tunnel radiators for the sake of simplicity and reliability, but the tunnel radiator is of such a type that it does not decrease the speed of the machine. The wings have been tapered and a number of apparently quite small alterations have been made in the machine, with the result that with the Curtiss D.12 engine the performance of the machine with full armament and war load, which was 162 m.p.h. two years ago, has now gone up to 172 m.p.h., and the machine is simpler to maintain.

THE PURSUIT-SHIP SPECIFICATION.

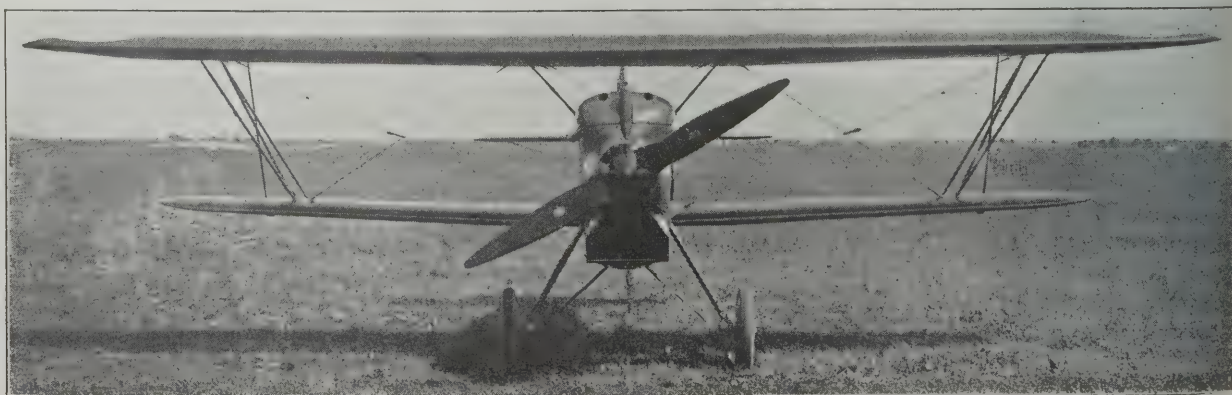
As to the specification which follows hereafter, readers should understand that it has been condensed from about five hundred pages of print and typewritten matter, and therefore a vast number of very interesting minor points have necessarily been omitted. For example, such questions of accessibility as the arrangement for changing or adjusting rudder pedals, and the arrangement of electric batteries so that access to them shall not be obstructed by the position of the fire extinguisher, have not even been mentioned.

Before starting to consider the specification itself there are certain points in it to which one would like to draw special attention. It will be noticed that the specification covers in one machine what would be, in a less efficient and economical country, twelve different types.

First and foremost it is a pursuit ship. Secondly, with a supercharged engine, it is an interceptor fighter, and thirdly, with an engine of low power, it is a training fighter, or what one might call an advanced training machine, which is also used for practice flying and for cross-country touring so as to avoid wearing out the high-powered and expensive engines.

In each of these capacities it may be used on floats, thus making six different types of the machine. And in each of these six capacities it may be fitted either with an air-cooled or a water-cooled engine, making twelve different machines of it.

In actual practice the Curtiss Hawk can be used with either the Curtiss V.1400 (510 h.p.), the Curtiss D.12 (435 h.p.), or the Wright E.4 (200 h.p.), a development of the Hispano-Suiza, which are all water-cooled engines, for Army use.



THE CURTISS HAWK (P.1.).—A front view of the standard U.S. Army Air Corps pursuit biplane. The tunnel radiator and spilt undercarriage, the latter standard throughout U.S. Service aircraft, are interesting features.



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Or it may be fitted with the Pratt and Whitney Wasp (425 h.p.) or the Wright Whirlwind (200 h.p.) air-cooled engines for the Navy. Practically the only difference in the machines is the paint. And in fact until the machines actually go into the paint shops to be painted green for the Army or aluminium for the Navy, and to receive their official numbering, nobody knows which Service they are going to or what engines are going to be fitted to them.

INTERCHANGEABILITY.

As will be seen from the specification, it must be possible to change from the high-powered active-service engine to the low-powered training engine, and from air-cooled to water-cooled, in not more than six hours with a crew of untrained mechanics. And this is actually done as part of the acceptance tests of the machines.

Moreover in changing engines of the same type, that is to say, high-powered to high-powered or low-powered to low-powered, the change must be made in not more than four hours for a water-cooled type or two hours for air-cooled engines. This perhaps, more than anything else, will show how the American Services are concentrating on saving labour in the field on active service.

Similarly it will be found that machines must be changed from land undercarriages to floats or contrariwise in not more than four hours with an untrained crew.

These times are not set as figures at which to aim but as tests which must actually be fulfilled. The same remark applies to all the other figures mentioned in the specification. And one hopes that they will be studied with due care.

Here is the specification:—

A GENERAL SPECIFICATION FOR CONVERTIBLE SINGLE-SEAT AEROPLANES.

THE FOLLOWING TYPES ARE COVERED BY THIS SPECIFICATION: (1) INTERCEPTER FIGHTERS, (2) PURSUIT FIGHTERS, (3) TRAINING FIGHTERS.

PART I (INTRODUCTORY).

(101) This is a general specification for a single-seat fighter aeroplane of a convertible type, suitable for use as a landplane or as a seaplane.

(102) The types covered by this specification are the following: (a) Interceptor fighter for local defence (b) Pursuit or long-distance fighter (c) Training fighter.

(103) As it is impossible to maintain a large well-trained personnel and expensive repair facilities in the immediate vicinity of the actual fighting area, inspection, repairs, replacements, etc., requiring such an organisation or a large allowance of time must therefore be kept to an absolute minimum.

A machine in need of such repair or attention is sent back for an indefinite time. With casualties many and facilities few an increased number of machines to maintain a given service is therefore required, and consequently an increasing amount of supply in all branches is the result. This decreases, of course, the active combatant forces available.

(104) Any point, therefore, that purports to relieve these drawbacks must therefore receive the closest attention of the designer. In certain instances one might even be justified in sacrificing performance for accessibility and ease of maintenance.

(105) The material specifications issued by the aircraft purchasing department from time to time, and any other such specifications that may apply, form part of this specification. The editions current on the date of the contract shall be followed.

(106) Where a discrepancy exists between this general specification and the detailed specification issued with each order the latter shall always be followed. The same applies to any plans that may be issued in connection with a contract.

PART II (PERFORMANCE).

(201) The minimum performance that is required from this type of machine, is as follows:—

| | Seaplane. | Landplane. |
|----------------------------|------------|-------------------------|
| High speed (sea level) | 170 m.p.h. | 180 m.p.h. |
| Low speed (sea level) | 55 m.p.h. | — |
| Ceiling (unsupercharged) | — | 25,000 feet |
| Ceiling (supercharged) | — | 38,000 feet |
| Climb from sea level | — | 15,000 feet in 10 mins. |
| Manœuvrability (sea level) | — | 7 |

NOTE: Manœuvrability is expressed by the ratio R/r where R is the rate of climb at sea level in feet per minute and r is the minimum radius of turn at sea level in feet.

(202) The aeroplane when equipped with a training engine (see par 402) shall have a high speed of not less than 155 m.p.h. and a service ceiling of not less than 18,000 feet as a land machine.

(203) The maximum permissible low speed at sea level, with any loading, included in this specification, shall not exceed the specified value as this is governed by the acceleration given by the catapult equipment. [See par. 414.—C. G. G.]

PART III (WEIGHT AND ITS CONTROL).

(301) Considerable delay frequently happens in the production of aeroplanes, through changes being required in the design owing to faulty estimation of weight and the centre of gravity, but as weight, etc., is of the utmost importance no appreciable variation from the estimate can be permitted. The contractor must therefore adhere to the following instructions to be sure that the estimated performance and load factors are fulfilled.

(302) The total weight of the aeroplane fully loaded shall not exceed the following values:

- (a) as a landplane,—2,900 pounds.
- (b) as a seaplane,—3,150 pounds.

(303) In the contract the builder shall guarantee that the

actual dead load will not exceed the estimated dead load used for the computation of performance and strength by more than 3 per cent.

(304) Along with the design the detail weights shall be given. All drawings shall be marked with a statement of the calculated weights of the respective parts and assemblies.

(305) As parts are constructed, the actual weights shall be measured and checked with reference to the calculated weights. The inspector representing the purchaser shall withhold acceptance of any part more than 5 per cent. over the calculated weight.

If, when all the parts completing an assembly or group (such as wing group or landing gear) are finished, it is found that the over-weight of the withheld parts is absorbed by corresponding under-weight in others, so that the group or assembly comes within the estimated weight, the over-weight parts may be passed. If not, the parts affected must be redesigned.

(306) Groups which are over the calculated weight by more than 3 per cent. will be rejected unless the contractor can show that this over-weight is absorbed by corresponding saving in other groups so that the total dead load comes within the guarantee, and provided that the contractor can satisfactorily demonstrate that the balance of the aeroplane will not be affected outside the limit set down in paragraph 309.

(307) No aeroplane contracted for shall be accepted unless the dead load is within 3 per cent. of the guaranteed weight. The contractor is not, however, to suffer from over-weight in any material furnished by the purchaser. With each aeroplane delivered the contractor shall submit a detailed statement showing the difference in weights of material as furnished and those originally submitted with the weight estimate. In case of a discrepancy the permissible weights will be corrected accordingly.

(308) Changes in design, involving change in dead-load weight or balance, made after preliminary approval, shall be authorised in writing from the Purchasing Department and the estimated weights and the location of the Centre of Gravity shall be revised accordingly.

(309) The location of the centre of gravity on the completed aeroplane may not vary more than 1 per cent. of the aerodynamic mean chord from the estimated positions.

(310) The aeroplane shall be designed to carry the following equipment:

(a) Crew.

| | lbs. | lbs. |
|--------------|-------|-------|
| Pilot | 180.0 | 180.0 |

(b) Military load.

| | | |
|--|------|-------|
| One 0.50 calibre gun | 52.0 | — |
| One 0.30 calibre gun | 24.0 | — |
| 200 rounds 0.50 calibre ammunition ... | 50.0 | — |
| 600 rounds 0.30 calibre ammunition ... | 39.0 | — |
| One Aldis gun sight | 3.0 | — |
| One ring sight | 0.9 | — |
| Two synchronising gears complete ... | 7.3 | — |
| Radio, camera, or equivalent | 41.0 | — |
| *Pyrotechnic projector | 4.0 | — |
| Pyrotechnic ammunition | 2.6 | — |
| Allowance for ammunition boxes, etc. | 18.0 | 241.8 |

(c) Equipment.

| | | |
|-----------------------------------|------|-------|
| Parachute | 18.0 | — |
| Pressure fire extinguisher | 7.0 | — |
| Hand fire extinguisher | 6.5 | — |
| Oxygen apparatus | 9.3 | — |
| †Instruments | 15.4 | 58.2 |
| Total specified load | — | 480.0 |

* The Véry pistol is obsolete. The projector is built into the fuselage and the cartridge is fired by hitting a button.

† The weight of the Pioneer Instrument Co.'s equipment complete is as stated.—C. G. G.]



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SPECIFICATION.

| | | | | | | |
|----------------------|-------|--------|---|---|---------------|---------------|
| SPAN | - | - | - | - | 32 ft. 9 in. | 10 Metres. |
| LENGTH | - | - | - | - | 26 ft. 10 in. | 8.18 " |
| HEIGHT | - | - | - | - | 9 ft. 6 in. | 2.9 " |
| WEIGHT EMPTY | - | - | - | - | 2,014 lbs. | 913.5 kgs. |
| FUEL & OIL | - | - | - | - | 321 lbs. | 145.6 " |
| PILOT | - | - | - | - | 170 lbs. | 77 " |
| ARMAMENT | - | - | - | - | 160 lbs. | 72.5 " |
| WEIGHT LOADED | - | - | - | - | 2,665 lbs. | 1,209 " |
| MAXIMUM SPEED | - | - | - | - | 150 m.p.h. | 241 km p.h. |
| LANDING SPEED | - | - | - | - | 50 m.p.h. | 80 " |
| CLIMB TO 10,000 feet | 3,050 | metres | - | - | in 7½ mins. | |
| " " 15,000 " | 4,570 | " | - | - | in 14 " | |
| " " 20,000 " | 6,095 | " | - | - | in 25 " | |
| SERVICE CEILING | - | - | - | - | 23,500 feet. | 7,163 metres. |

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THE CURTISS HAWK (P.1)—The standard single-seat pursuit aircraft of the U.S. Army Air Corps. With the Curtiss D.12 engine the P.1 has a top speed of 170 m.p.h. at sea level, 154.5 m.p.h. at 15,000 ft., a landing speed of 61 m.p.h., climbs to 12,350 feet in 10 mins., 15,000 feet in 14 mins., and has a service ceiling of 21,000 feet. The P.2 (Curtiss V.1400 engine) has a top speed of 180 m.p.h. and climbs to 16,000 feet in 15 mins.

(d) Fuel and oil.

Fuel and oil shall be computed for a duration of half an hour at sea level and $2\frac{1}{2}$ hours at 15,000 feet altitude with full throttle. The volume of oil shall, however, never be less than 10 per cent. by volume of the fuel.

(311) Paragraph 414 calls for an additional fuel capacity of 30 per cent in excess of what is specified above. Care should be taken that the oil tank capacity is sufficient to take care of the additional endurance.

PART IV (POWER PLANT).

(A) Engine.

(401) Any engine that has satisfactorily passed the type acceptance tests may be used providing the design of the accessories, etc., are such that the provisions below can be met. In case of a water-cooled type an inverted position is preferred.

[NOTE: No engine-power is specified because this is governed (A) by such types of engines as exist and comply with the specified requirements, and (B) by the performance figures required in paragraph 201.—C. G. G.]

(402) The aeroplane shall be so designed that an engine with the same cooling method, of approximately 200 h.p., can be substituted to make the machine satisfactory for use as a training machine.

The change from the regular service engine to the training type engine, with attendant changes in cooling system and cowling, shall not take longer than six hours with a crew of mechanics which is not specially trained for the performance.

It is preferred that such a change shall be accomplished without any changes back of the fire-wall (fire-proof bulk-head).

(403) It shall be possible to instal a supercharger without any changes other than those needed in the cowling and cooling system.

(404) The engine shall be so mounted in the aeroplane that it can readily be removed as a unit.

The time allowance for the complete change of engine (of the same type) shall be no more than four hours for the water-cooled and two hours for the air-cooled engine.

The Purchasing Department will require the contractor to demonstrate this satisfactorily with a crew of mechanics which is not particularly familiar with the type of machine in question.

All engine accessories, such as magnetos, distributors, carburetors, water-, oil-, and fuel-pumps, starting gear, etc., shall be readily accessible. And it shall be possible to remove and replace any of them without moving the engine or any other part of the installation or structure except minor parts of the cowling.

(405) It is desirable that the engine shall be sustained on rubber or some substance which absorbs vibration.

(406) The cowling shall, if possible, not be supported by the engine.

All units of the cowl shall be independent and the removal of one cowl part shall not loosen another.

All cowls shall be completely interchangeable on aeroplanes delivered on the same contract.



INTERCHANGEABILITY.—The Pratt and Whitney Wasp in a similar Hawk for the U.S. Navy. This shows the neatness of the cowling, with the exhaust pipes behind the cylinders and all the ignition and other gear inside.

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Large doors shall be provided so that the engine compartment is easily accessible and so that minor adjustments can be made without removing any part of the cowl. All such doors shall be hinged on the upper or forward edge so they are self-closing.

Steps shall be provided so that any part of the engine shall be accessible, and so that work can be done on the engine without any external support.

(407) The airscrew supplied shall be made of metal and of an approved design and coated suitably for night flying. [Maroon has been found to be the only colour which does not reflect the rays of searchlights.—C. G. G.]

(408) A pressure fire extinguisher shall be provided, readily accessible to the pilot. The nozzles shall be so located that the engine compartment is efficiently sprayed, particularly around the carburettors.

A hand fire extinguisher shall also be carried, accessible from the outside of the machine. A location for the latter in the vicinity of the starter handle is preferred.

(409) The priming pump shall be accessible from the starter's position and shall be provided with a shut-off valve.

(410) The carburettor air intake shall be so located that it will be impossible for water spray to enter the engine.

(411) The hand starter shall be conveniently operated by the pilot or a member of the crew when afloat, and from the ground.

(B) Fuel system.

(412) The fuel supply shall be operated by an engine-driven fuel pump delivering the fuel directly to the carburettors from the main tank.

A hand-operated fuel pump shall be provided in the system for priming and emergency purposes.

A reserve supply sufficient for a flight of 15 minutes at full throttle at sea-level shall be available and readily connected. For this purpose a stand-pipe in the main tank is recommended.

(413) All fuel shall be contained in one main fuel tank except as hereinafter noted.

This main tank shall be provided with a positive-acting release mechanism so that the tank can be dropped at the will of the pilot in case of emergency in any attitude of normal flight at any forward velocity.

This requirement may in certain cases be waived in the seaplane. But in that case some provision shall be made in the float undercarriage making the release automatically inoperative when the standard fuselage is fitted with floats.

(414) Provision shall be made so that an extra amount of 30 per cent. of the fuel capacity can be accommodated in a special tank for long flights.

This tank shall be attached ready for operation in less than 15 minutes. The tank shall be connected to the regular fuel system.

It shall also be releasable under the same conditions as the main tank.

The total weight of the aeroplane, etc., shall be computed with this tank not in place and all performance tests shall be made without it.

(415) In disconnecting the fuel lines preparatory to dropping the tanks a method which shears the tubes shall be used. A slip joint or glass connection is not permitted.

After shearing all lines shall drain clear of the aeroplane, or be provided with an automatically operating shut-off arrangement.

(416) Both tanks shall be provided with an adapter for an incendiary fuse. This fuse shall be in a state of safety until the tank is clear of the aeroplane and provision shall also be made so that the tank can be dropped "safe."

(417) Welded aluminium tanks will not be permitted. And tanks must be easily repaired with the tools available at the average field repair station.

(418) Fuel lines shall be seamless copper tubing annealed after bending and with rigid connections. Unions shall be provided to require minimum dismantling in case of replacement.

The joint next to the engine shall, however, be flexible and provided with an "olive."

Care should be taken that the fuel system is as simple as possible.

(419) A fuel-supply diagram shall be located in the cockpit.

(420) All tanks shall be designed to withstand a test pressure determined by the following formula:—

$P = DF/4$ where P = testing pressure in lbs. per sq. in. D = depth of tank in feet. F = load factor for wings in high angle of attack.

But no tank shall be tested with a pressure less than 4 lbs. per sq. in.

(421) Two 100-mesh per inch strainers shall be provided in the fuel line. One shall be adjacent to the tanks and one to the carburettors. These strainers shall also be so designed that they will act as water sumps.

(422) Provision shall be made to allow the system to be drained with the aeroplane on the ground or at rest in the water. The drain plugs shall have a minimum clear opening of $\frac{3}{4}$ -inch diameter, and a provision for attaching a hose is desired. A smaller drain-cock should also be provided in addition. [To allow for extraction of small quantities for domestic purposes.—C. G. G.]

(423) All filler openings shall be at least 3 inches in diameter.

(424) All caps for the filler openings shall be securely fastened with lanyard chains.

(C) Oil system.

(425) The oil tank shall be located forward of the engine fire-wall bulkhead and as close to the engine as possible, but in such a position that in case of a crash oil cannot be splashed over the exhaust manifolds.

(426) An unfillable expansion space shall be provided in the oil tank with a volume of at least 10 per cent. of the oil capacity.

(427) The same requirements apply to the oil lines as apply to the fuel lines with the exception that aluminium alloy or steel tubing may be used.

(428) Oil and fuel tanks shall be completely replaceable in less than two hours without the assistance of any hoisting gear, etc.



THE WRIGHT APACHE.—An experimental single-seat pursuit biplane built by the Wright Aeronautical Corporation and fitted with the 425 h.p. Pratt and Whitney Wasp engine. In the Kansas City Rotary Club Trophy Race this machine, flown by Lieut. C. C. Champion, U.S.N., averaged 168.8 m.p.h. over a 120-mile course.

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(429) The oil system shall be completely drainable with the aeroplane normally at rest.

(D) *Cooling system.*

(430) The cooling system shall be designed to operate satisfactorily and the water shall not exceed a temperature of 95 deg. C. when the aeroplane, carrying full load at full throttle, climbs at maximum rate from sea level to 15,000 feet altitude with water at an initial temperature of not less than 60 deg. C. at take off, with a ground temperature at the ground of 38 deg. C.

With the same ground temperature and maximum engine revs., below 1,000 feet altitude the temperature of the water shall not exceed 95 deg. C.

(431) Any radiator that forms part of the supporting surfaces or is unduly large in dimensions shall not be used. Built-up tubular radiators shall not exceed 9 ins. in core depth.

(432) Shutters capable of blanketing the whole radiator surface shall be provided.

(433) A drain valve operated from the pilot's cockpit shall be provided, capable of completely draining the system in one minute. [To prevent freezing and consequent damage to the engine, if the engine stops at a high altitude.—C. G. G.]

(434) At the highest point in the system an approved safety valve shall be provided, as well as a pressure gauge. And means for venting the system shall be convenient to the pilot.

(435) The system shall carry sufficient water to provide satisfactory cooling during a period equal to the maximum duration of the aeroplane. It is required, however, that all water shall be in circulation, to prevent freezing.

(436) The cooling system shall be so designed that the radiator size may easily be changed.

(437) The water system shall be tested with a pressure determined from the same formula as for the fuel tank (*see par. 420*) with the exception that the normal operating pressure shall be added. The minimum test pressure shall be 5 lbs. per sq. in.

(E) *Oil temperature regulator.*

(438) An oil-heater and water-cooled oil temperature regulator shall be installed in all water-cooled engine installations. The operation of this unit shall be entirely automatic and shall be so designed that the aeroplane can safely begin its flight two minutes after starting the engine with the cooling water and oil at an initial temperature of 10 deg. C. For air-cooled engines an exhaust-heater is recommended.

PART V (ARMAMENT).

(A) *Gun installation.*

(501) As it is the main purpose of this type of aeroplane to carry guns the utmost care must be taken in the design of the gun installation, and its satisfactory arrangement cannot be subordinated to any other requirement. Experience has proved that in no case where the gun requirements have been so subordinated has it been possible later to revise the installation to become satisfactory.

A general installation drawing showing the complete gun arrangement and its relation to the engine, pilot, wings, cockpit, etc., must therefore be submitted to the Purchasing Department and approved by them before construction of any part of the aeroplane is started.

In the event of a novel or unusual arrangement a mock-up must be built to demonstrate that the installation is satisfactory.

(502) For general purposes one 0.50 calibre gun and one 0.30 calibre gun shall be carried. Both shall be synchronised with the engine to shoot through the airscrew disc. But as special requirements may develop that instead will require two 0.30 calibre with 600 rounds each, or even two 0.50 calibre with 200 rounds each, the installation shall be such that without other changes than such properly belonging to the

guns (that is no structural or cowl changes) any combination may be used.

(503) The location of the guns in respect to the pilot is most important and the dimensions given in the following table may not be deviated from.

| Dim. "A" | Dim. "B" | Dim. "B" |
|------------------------|-----------------------|-----------------------|
| 0.30 and 0.50 calibre. | 0.30 calibre. | 0.50 calibre. |
| 14 in. min. | 18 in. to 23 in. max. | 15 in. to 18 in. max. |
| 16 in. | 17 in. to 22 in. | 14 in. to 17 in. |
| 18 in. | 16 in. to 20 in. | 13 in. to 16 in. |
| 20 in. max. | 16 in. to 18 in. min. | 13 in. to 15 in. min. |

(504) No gun shall be closer to the centre line of the aeroplane than $3\frac{1}{2}$ in. nor shall the distance between the guns be less than 10 $\frac{1}{2}$ in. [The former proviso is to prevent the constructor from putting the gun in an un-get-at-able position.—C. G. G.]

(505) To facilitate the change of gun-barrels the cockpit and cowl shall be so designed that change of barrels can be made without altering the alignment of the guns.

(506) No instrument-board or the like may obstruct the accessibility of the guns, ammunition boxes, chutes, etc., in any way. All units of the gun installation shall be replaceable without disturbing any other units of the aeroplane except possibly cowl.

(507) Gunsights must be supported from a rigid place and the mounting of them on the cowl is disapproved.

(508) The venting of the gun-gases into the exhaust manifolds of the engine must be provided so that such gases can not enter the cockpit.

(B) *Bomb racks.*

(509) Provision shall be made for the installation of a set of external bomb racks accommodating four fragmentation bombs of 25 pounds each. The necessary brackets in the cockpit for the release handles etc., shall be provided. Flight tests, etc., will be carried out without the racks attached.

PART VI (STRUCTURE).

(A) *General.*

(601) Only such material shall be used in the structure as is commercially obtainable in large quantities.

(602) All welded steel parts carrying main stresses shall be made from a steel having approximately the following composition:—Carbon 0.25 per cent. to 0.35 per cent., Manganese 0.40 per cent. to 0.70 per cent., Chromium 0.50 per cent. to 0.80 per cent., Molybdenum 0.15 per cent. to 0.25 per cent., Sulphur, Max., 0.045 per cent., Phosphorus, Max., 0.04 per cent.

(603) All parts that might have to be replaced at a field repair station such as wiring plates, etc., shall be manufactured from material that requires no heat treatment to develop the required strength. [Field equipment does not include heat-treating furnaces or expert operators. Repairs may be done by a blacksmith.—C. G. G.]

(604) For the design of all the various members the allowable fibre stress that is shown in the respective specifications shall be used.

(605) A hoisting sling attachment for lifting the assembled aeroplane shall be provided. For the design of this and the parts affected a load factor of 4 shall be used.

(B) *Fuselage.*

(606) The fuselage shall be of a rigidly braced welded steel tube structure. It shall be divided into three parts, one forward, one centre and one aft.

(607) The fuselage shall be designed to carry the following loads:—

(a) A dynamic load factor equal to that specified for the wings at high angle of attack (*see par. 614*) together with a load on the horizontal tail surfaces one-third as large as that specified for the tail surfaces themselves.

(b) A load on the horizontal tail surfaces equal to that specified, but with no dynamic loads. Reactions in this case shall be applied at the wing spars.

(c) A load on the vertical tail services equal to that specified but with no dynamic load. Reactions in this case to be taken by the wings.

(d) The engine mounting and the adjacent structure shall be designed to withstand a thrust load equal to 12 lbs. per brake h.p., together with an engine torque equal to

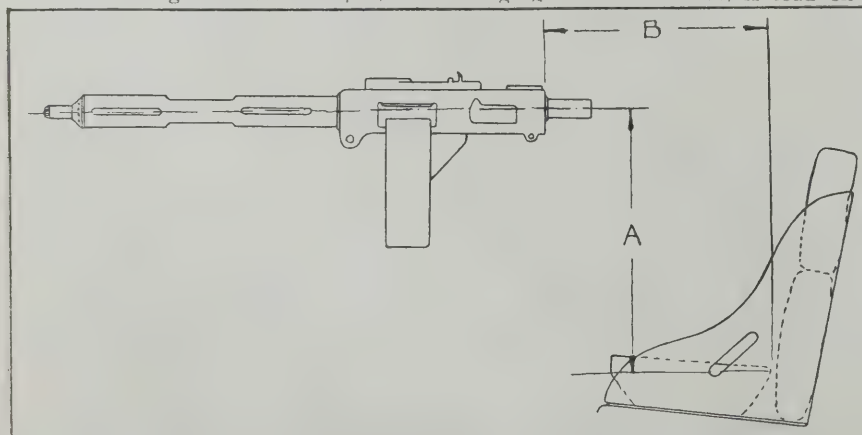


Diagram for Gun Positions, as specified in paragraph 503.

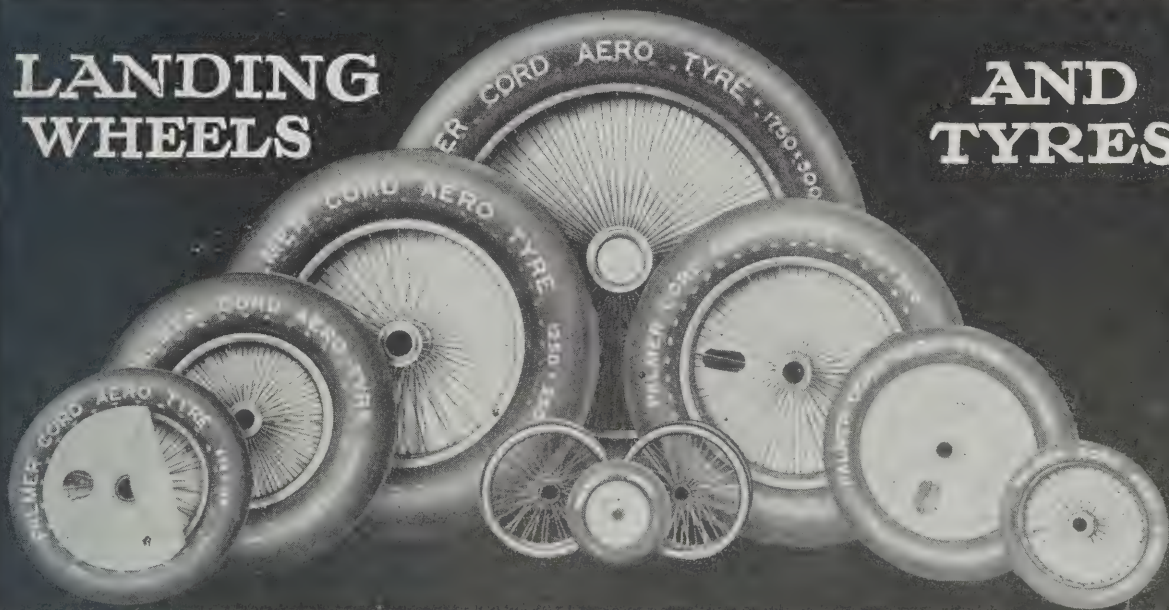


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LANDING
WHEELS

AND
TYRES



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|---------------|-------------|----------------|-----------|-----------|-------------|--------------|----------------|-----------|-----------|-------------|--------------|----------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375×55 | 168 | m/m 111.12 | m/m 25.4 | m/m Central | 700×100 | 112 | m/m 150. | m/m 38.09 | m/m Central | 1000×150 | 210 | m/m 185. | m/m 60.32 | m/m Central |
| 300×60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000×180 | 148 | 220. | 80. | Central |
| 450×60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650×125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575×60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900×230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750×125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650×65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100×220 | 134 | 220. | 66.67 | Central |
| 600×75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800×150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975×225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 133 | 250. | 80. | Central |
| 700×75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250×250 | 154 | 304.8 | 101.6 | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 115 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500×300 | 126 | 304.8 | 152.4 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | 1750×300 | 139 | 400. | 152.4 | Central |
| 700×100 | 77 | 178. | 44.45 | 132/46 | 1000×150 | 167 | 185. | 55. | 125/60 | " | 191 | 350. | 150.3 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | 1750×350 | 193 | 400. | 125. | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | | | | | |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 × 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
Grease gun equipment is now a standard fitting on all wheels.

THE PALMER TYRE LIMITED,

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twice the full load torque of the engine. Both shall be superposed on a dynamic factor of $1+N/4$ where N is the high angle of attack load factor for the wings (in this case $1+12/4=4$).

(e) A load factor of 10 on all weights in the fuselage to be applied parallel to the longitudinal axis of the fuselage or at any angle up to 30 deg. with that, in any direction. Reactions to be taken at points where catapult and arresting gear loads are applied to the fuselage structure.

(f) A dynamic load factor of 15 on all weights in the fuselage aft of the cockpit and to the crew acting in the same manner as in condition (e). In this case the fuselage shall be considered to be cut just forward of the pilot's cockpit and uniformly supported on the longerons.

(g) A dynamic load factor on all weights which will result from a landing with the vertical velocity specified for the landing gear (see par. 635). Reactions shall be taken as passing through the landing gear axle and inclined to pass through the centre of gravity of the aeroplane.

(h) Any load that may be transmitted from the landing gear, float structure, or wings, etc., must be satisfactorily followed through and distributed.

(608) The fuselage cowls shall be such that easy access to the guns and other equipment can be had. One side of the fuselage to a point aft of the cockpit shall be covered with an easily removed panel. [To allow for getting at control gear, rudder pedals, etc., without forcing the mechanic to stand on his head in the cockpit.—C. G. G.]

Large doors shall be provided for all inspection work, etc.

(609) The cockpit shall be supplied with a substantial floor.

(610) The seat shall be adjustable in a vertical and fore and aft direction in the air.

(C) Wings.

(611) The wings shall be located in such a position that a maximum possible view is obtainable from the pilot's position. Particular attention shall be given to the forward-downward view in landing.

(612) The minimum permissible distance between the fuselage and the wing chord on the upper wing is 1 in. [To allow the armourer to get at the guns.—C. G. G.]

(613) The wings shall be wired for navigating lights, flares, etc.

(614) The wings shall be designed to withstand the following load factors:—High incidence condition, 12. Low incidence condition, 6.5. Inverted flight, 4. Limiting dive, 2.

(615) The angles of attack for the various conditions shall be ascertained from the performance estimate and the centre of pressure shall be taken as shown by the wind tunnel tests. The load-distribution shall be taken from the wind tunnel tests or from some previously made tests in full flight on wings of similar arrangement and section.

(616) In addition to the factors given in par. 614 it will be required that the contractor shall demonstrate by test that the leading edge of the wings forward of the front spar shall support in an inverted position a load per foot run equal to seven times the load per foot run of the whole wing.

(617) The rib spacing in the slipstream shall not exceed 9 in. and outside the slipstream it shall not be more than 12 in. To insure a uniform wing profile it is required that in fabric-covered wings the portion forward of the front spar shall be covered by some stiff material such as sheet metal or veneer.

(618) The ribs shall be designed to withstand a loading 10 per cent. in excess of the load factors given above. Six ribs shall be taken from production to ascertain if the required strength is maintained.

(D) Ailerons.

(619) The ailerons may be balanced if found desirable. They shall be operated by two independent systems of cables (one set for each side of the aeroplane) and shall have a minimum movement of 25 deg. Care should be taken in the lay-out of the control system that the simplest possible operations are required when dismantling and erecting the aeroplane.

(620) The ailerons shall be designed to withstand a loading equal to one-third of the product of the unit wing loading in steady flight and the load factor specified for the wings at high angle of attack.

(E) Tail surfaces.

(621) The horizontal stabiliser shall be adjustable in incidence in the air. The vertical shall be adjustable on the ground.

(622) No control surfaces in the tail group shall be balanced. [This prevents the pilot from putting himself out of action by achieving too violent accelerations.—C. G. G.]

(623) The tail surfaces shall be designed to sustain the following loads:—Vertical, 30 lbs. per sq. foot. Horizontal, 35 lbs. per sq. foot.

The load shall be distributed uniformly over the fixed surface, but for the movable portion the intensity of loading at the hinges shall be equal to the loading on the fixed surface in front of it and shall decrease uniformly to an intensity of one-third of this value at the trailing edge.

(624) The rudder shall be so designed that there shall be the least possible liability to damage in the event of a tail-skid failure.

(625) The elevator torque member shall be continuous but each half of the elevator shall be operated by one set of control wires.

(F) Landing gear.

(626) The landing gear shall be so placed that the angle between the plane containing the centre of the axle of the wheels and the centre of gravity of the aeroplane and the thrust line shall be not more than 81 deg.

(627) The track shall be wide enough to permit of standing on a surface inclined 15 deg. to the horizontal in the transverse plane.

(628) The angle between the ground line and the line connecting the point of ground contact of the wheel with the wing-tip shall not be less than 6 deg.

(629) With the maximum load imposed, the shock absorbers extended to the limit and the tyres flattened against the ground, the clearance under every fixed part of the aeroplane shall be at least one-sixth of the rim diameter.

(630) However, the clearance under the airscrew with the aeroplane in flying attitude shall not be less than 9 in.

(631) The clearance of the airscrew over the water in the seaplane shall not be less than 18 in. at rest.

(632) The clearance between the tips of the airscrew and any part of the aeroplane shall not be less than 2 in.

(633) It is not permissible to use a landing gear with a continuous axle between the wheels.

(634) The tail skid shall be steerable.

(635) The landing gear shall be designed to withstand the following load factors:—Struts, 6. Axle, 5.5. Shock absorbers, 5. Side thrust, 20 per cent. to be used in conjunction with above factors. With side thrust only it should be taken as 1.5 times the weight of the aeroplane.

NOTE: Inclined laterally the landing gear must stand a drop of 24 in. and tail skid 30 in. with full load. The inclination for this test shall be $9\frac{1}{2}$ deg.

(G) Floats.

(636) The submerged displacement of the main floats shall be approximately 200 per cent. of the full load weight of the aeroplane.

(637) Several water-tight subdivisions in the floats are required.

(638) Hand holes not less than 4 in. in diameter with water-tight covers (rubber covers preferred) are required in each water-tight compartment. The covers shall have a 1/16 in. diameter hole to equalise the pressure and be provided with a lanyard chain.

(639) Drain plugs shall be provided in each compartment and these shall be removable through the hand holes or from the outside.

(640) The float structure shall be designed to withstand the following loads:—

(a) A load perpendicular to the thrust line and equal to eight times the weight of the aeroplane.

(b) A load perpendicular to the thrust line and equal to that specified in (a) combined with a load parallel to the thrust line and equal to 25 per cent. of the vertical.

(c) A load perpendicular to the thrust line and equal to 90 per cent. of that specified in (a) combined with a transverse load, which shall be considered to be applied half-way between the keel and the chine.

(d) A catapult load applied at the step, of sufficient force to give the aeroplane an acceleration of $3\frac{1}{2}$ g. The load factor shall be taken as 2.

(641) The change from one type of alighting gear to the other (water gear) shall not take longer than four hours.

THE SCHNEIDER TROPHY CONTEST.

Though no photographs are yet available of the Macchi monoplanes built to compete for the Schneider Trophy on Nov. 11 at Hampton Roads, Va., it is possible to give some particulars of them.

The machines, four of which are believed to have arrived in the States, are twin-float monoplanes. The Macchi Company have wisely adopted best points of the American and British machines of last year.

The fuselage of the new type is almost pure Curtiss, and looks very clean. The monoplane wing is low like the Supermarine S.5, but, unlike it, is wire-braced. The float de-Gloster, with Curtiss float struts, meeting at the centre-line of the fuselage.

The machine looks extremely fast and has a reasonable chance of regaining the Trophy.

Should the Italians win, the contest will be held in Italy next year, for though Italy has won the Trophy twice already, it will not become Italian property by a win this year. The rules specify that the Trophy must be won three times in five years to become the exclusive property of the winner, and Italy's last win was in 1921.

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THE ROYAL AIR FORCE.

The London Gazette.

Oct. 12.

GENERAL DUTIES BRANCH.—H. Broadhurst is granted a S.S. comm. as a Plt. Off. on probation, with effect from and with seniority of Oct. 1. The following Plt. Offs. are promoted to the rank of Flg. Off.:—N. S. Little (Aug. 16); E. L. Drew (Aug. 17); G. P. Mee (Sept. 6); P. B. Chubb (Sept. 6); D. C. Shaw (Sept. 17).

The following Plt. Offs. on probation are confirmed in rank:—J. McGuinness, G. E. Campbell, D.F.M., A. H. Owen (Sept. 1); M. A. Cowan (Sept. 10); J. H. Harris (Sept. 13). Plt. Off. J. C. H. Tavendale takes rank and precedence as if his appointment as Plt. Off. bore date Dec. 17, 1924, immediately following Plt. Off. J. G. Franks on the gradation list. Reduction to take effect from Aug. 23. Plt. Off. M. H. Frame resigns his S.S. comm. (Oct. 4).

STORES BRANCH.—Flg. Off. J. E. Truss, M.C., is granted a perm. comm. in this rank (Oct. 13), Flg. Off. C. S. Whellock is transferred to the Stores Branch on probation in this rank, with effect from and with seniority of Oct. 1; Flt. Lt. E. R. Webb relinquishes his S.S. comm. on account of ill-health and is permitted to retain his rank (Oct. 10).

MEDICAL BRANCH.—Sq. Ldr. B. F. Beatson, D.T.M., is placed on retired list at his own request (Oct. 13); Flt. Lt. H. R. Peck (temp. Capt., Army Dental Surgeon), relinquishes his temp. comm. on return to Army duty (Sept. 20).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. on probation in the General Duties Branch, in the ranks stated (Oct. 12):—CLASS A: Flg. Off.—C. W. Carleton, A.F.C. Plt. Off.—M. T. Bromley CLASS B.B: Plt. Off.—J. P. James. The following Plt. Offs. are confirmed in rank:—J. Hill, C. W. Lofthouse, R. G. Shaw (Oct. 5); C. W. Carter (Oct. 6); H. S. Fulton (Oct. 7).

Flg. Off. W. J. Buchanan, D.F.C., is transferred from Class A to Class C (Sept. 6).

The following Flg. Offs. relinquish their comms. on completion of service:—J. Fairbairn (Aug. 28); S. C. Rose (Sept. 12); W. J. Sivewright (Sept. 12); G. L. G. Watson, M.M. (Sept. 19); H. Hoad (Oct. 10).

The comm. of Plt. Off. on probation G. W. Phillips is terminated on cessation of duty (Sept. 21).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Miss E. M. Burton resigns her appointment as Sister (Aug. 19).

Appointments.

Week ending Oct. 18.

GENERAL DUTIES BRANCH.—Squadron Leaders G. H. P. Padley, to C.F.S., Upavon, 4/10. L. F. Forbes, M.C., to No. 7 Sqdn., Bircham Newton, 11/10. H. I. Hammer, D.F.C., to No. 13 Sqdn., Andover, 1/10. W. Sowrey, D.F.C., A.F.C., to No. 2 Sqdn., Manston, 1/10. R. H. M. S. Sandby, M.C., D.F.C., A.F.C., to No. 58 Sqdn., Worthy Down, on transfer to Home Estab., 15/10. R. Hailey, D.F.C., A.F.C., to H.Q., Cranwell, 1/10. L. C. Keeble, to H.M.S. *Hermes*, 7/10.

Flight Lieutenants F. Beaumont, to R.A.F. Depot, Uxbridge, 11/10. J. P. Lawson, A.F.C., to Heliopolis Details, Egypt, 21/9. S. M. Kinkead, D.S.O., D.S.C., D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 27/9. S. L. G. Pope, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 27/9. W. S. Allen, to H.Q., No. 21 Group, West Drayton, 7/10. F. W. Walker, D.S.C., A.F.C., to School of Naval Co-operation, Lee-on-Solent, 4/10.

Flying Officers H. R. McL. Reid, D.F.C., to R.A.F. Cadet College, Cranwell, 12/10. E. F. Haylock, to No. 503 Sqdn., Waddington, 12/10. C. Sutton, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 19/9. R. L. Yates, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 11/9. R. F. Overbury, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 21/9. (Hon. Flt. Lt.) G. Anderson, to R.A.F. Depot, Uxbridge, 11/10. J. A. Mollison, to E. and W. School, Flowerdown, 13/10. G. J. Gaynor, to E. and W. School, Flowerdown, 8/10. C. F. Caunter, to Station H.Q., Northolt, 11/10. A. H. Wheeler, to No. 111 Sqdn., Duxford, 18/10. C. F. H. Grace, to Home Aircraft Depot, Henlow, 15/10. E. A. H. Fisher and I. W. C. Mackenzie, to A. and G. School, Eastchurch, 12/10.

Pilot Officers C. Pitt-Hardacre, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/10. H. Broadhurst, to No. 11 Sqdn., Netheravon, on appointment to a S.S. Comm., 1/10.

MEDICAL BRANCH.—Flight Lieutenant (Dental) E. A. Wheeler, to R.A.F. Depot, Uxbridge, on appointment to a Temp. Comm., 1/10. Flying Officers F. A. Rice, M.B., to A. and A.E.E., Martlesham Heath, 2/10. N. I. Smith, M.B., to Research Laboratory and M.O.S. of I., 8/10. H. Penman, M.B., to Research Laboratory and M.O.S. of I., on appointment to a S.S. Comm., 8/10.

STORES BRANCH.—Flying Officers C. B. Horsfield, to R.A.F. Training Base, Leuchars, 3/9. A. G. S. Tuke, to H.M.S. *Hermes*, 7/10. L. Horwood, M.C., to M.A.E.E., Felixstowe, 8/10. Pilot Officers.—The undermentioned Pilot Officers are posted to H.Q., R.A.F., Cranwell, on appointment to Perm Comms. (on probation), with effect from 9/10:—J. E. R. Sowman, O. W. T. Rogers, A. A. Quayle, W. A. D. Collingwood, M. S. Shapcott, C. I. Fry, R. B. Hortsman, R. B. Brown, R. S. Sawyer, T. I. Iliff, W. A. Stagg, C. J. Nobbs, H. D. Jackman, E. H. Walker, E. G. Northway, W. G. S. Wood.

CHAPLAINS' BRANCH.—The Rev. A. W. Brown, M.A., B.D., to Station H.Q., Upavon, 7/10. The Rev. W. T. Rees, B.D., to H.Q., Egypt, 21/9. The Rev. G. A. Davies, B.A., to Home Aircraft Depot, Henlow, on transfer to Home Estab., 21/10.

Palestine and Transjordan.

THE AEROPLANE is informed by the Air Ministry that from Oct. 1, 1926, the Palestine Command, R.A.F., has ceased to be a separate command and has been absorbed into the Middle East Command whose headquarters are at Cairo.

The R.A.F. in Palestine and Transjordan have been amalgamated, and renamed R.A.F. Transjordan and Palestine, and their headquarters have been transferred from Bir Salem, Ludd, to Amman.

This group is now under the command of Group Captain L. W. B. Rees, V.C., O.B.E., M.C., A.F.C.

The Air Display at Croydon.

The following programme has been arranged for the occasion of the visit to Croydon Aerodrome of the Prime Ministers and other representatives of the Dominions and India and other guests of H.M. Government

14.30 hrs.—An inspection of Service and Civil Aircraft by the guests. The representative types will be lined up on the West side of the aerodrome and pilots will stand by to give any information required by the visitors.

15.00 hrs.—Aerobatics by three pilots of No. 56 (Fighter) Sqdn., R.A.F., on Grebes.

15.10 hrs.—Air Manœuvres by Radio Telephony by No. 41 (Fighter) Sqdn., R.A.F., on Siskins. Three flights of three machines will take part in this event. The R/T call of the Ground Station will be "Martin." The Squadron Commander's call will be "Condor R." and the call for all aeroplanes of the Squadron will be "Condor."

15.30 hrs.—Formation flying by two bombing Squadrons of the R.A.F. The two Squadrons taking part in this event will be Nos. 7 and 9 (Virginias).

15.40 hrs.—Display by Moths and other light aeroplanes.

16.00 hrs.—Passenger aircraft will be available for flights by guests. Machines will be two W.10s and one Argosy.

15.45 hrs.—Inspection of Air Ministry Exhibits in one of the sheds. These exhibits will include a model of the Control Tower (air traffic), a reproduction of the meteorological service, an exhibit by the Aircraft Operating Co. Ltd., flood lighting by means of a drum lens (4 million candle-power) for illuminating aerodromes. The exhibits will also include models of various aircraft.

The aeroplanes taking part in the display will be:—

Civil Aircraft:—Argosy, Hercules, W.10, Hampstead, Hamilton, W.8B, Hamlet, Highclere (D.H.54), D.H.50J.

Light Aeroplanes:—Moth (Cirrus), Moth (Genet), Cygnet, Brownie, Widgeon, Mussel, Avian and Bluebird.

Service Aircraft:—Grebe, Gamecock, Siskin, Woodcock, Fawn, Fox, Horsley, Virginia, Hyderabad, Snipe, D.H.9a, Vimy, Bristol Fighter, Flycatcher, Victoria, Blackburn, Bison, Fairey IIID, Dart, Avro 504K, Avro 504N (Lynx).

There will be a small public enclosure and a car park on the West side of the aerodrome.

The Fleet Air Arm.

The Times of Oct. 16 and 18 states:—

It is announced in Admiralty Fleet Orders that it has been arranged with the Air Ministry that classes of instruction are to be held in each aircraft carrier (including H.M.S. *Vindictive*) in order to train certain of the naval and R.A.F. personnel in these ships in trades of the sister Service corresponding to their own.

One of the objects of this instruction is to establish relations of mutual understanding between the two Services, and to enable the one to appreciate the duties and responsibilities of the other. But besides this, it is hoped that the instruction will eventually produce a potential reserve of trained personnel within the Fleet which can be drawn upon in cases of casualties, sickness, or a sudden but temporary call on the Fleet in peace or war, pending replacement by men from the proper Service.

Under this scheme for the mutual training of seamen and airmen in aircraft carriers in the trades of each other, naval ratings will be taught to undertake air duties as follows:—Ordnance artificers, duty as armourers; shipwrights and joiners, as carpenters and carpenter riggers in so far as the latter's duties are concerned with wood structures; and engine-room artificers, as fitters (aero) and carpenter riggers in so far as the latter's duties are concerned with metal structures and aircraft rigging.

Conversely, R.A.F. fitters (aero) will be trained to undertake ship duties of engine-room artificers; armourers, ordnance duties; carpenters, shipwrights' and joiners' duties; and W/T operator mechanics and electricians the duties of electrical artificers, R.N.

After successfully qualifying in the courses, the personnel so trained, if they can be spared from their normal duties, are actually to perform those duties under the direct supervision of the responsible rating with whom they are working, and opportunities are to be given thereafter for the men to maintain their proficiency.

H.M.S. Argus.

The Times of Oct. 14 states:—

The completion of the aircraft-carrier *Argus*, which has been paid off in dockyard hands at Chatham for nearly a year, is fore-shadowed by the appointment to her of Commander M. W. S. Boucher, D.S.O., from the senior officers' technical course. Commander Boucher passed through the aviation course at Upavon and Gosport last year. He was formerly in the Operations Division of the Naval Staff. He was navigator during the war of the gunboat *Ha'cyon* and the cruisers *Lowestoft* and *Leviathan*, but has since been mainly employed on executive duties, being in command of the *Leamington* in 1919-21. The *Argus* is expected to commission for trials on Nov. 23.

H.M.S. Eagle.

The Times of Oct. 16 states:—

The aircraft-carrier *Eagle*, Capt. Brien M. Money, D.S.O., is due to leave Devonport to-day, after recommissioning, for Malta, to resume duty with the Mediterranean Fleet. Recently, this Fleet has been without an aircraft-carrier, owing to the return to England of the *Eagle* and the despatch of the *Hermes* to China.



The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
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CATAPULTS AND ARRESTING GEAR.

Those who are interested in real aeronautical progress, more especially in relation to aircraft of war, ought to make a point of attending the Meeting of the Institution of Aeronautical Engineers in the Lecture Room of the Junior Institution of Engineers, 39, Victoria Street, at 6.30 p.m. on Tuesday next, Oct. 26, when Mr. G. H. Dowty, A.F.R.Ae.S., will lecture on "Aircraft Alighting and Arresting Mechanisms."

From an advance copy of the paper one gathers that, after discussing ordinary undercarriages and so forth, Mr. Dowty will describe a portable arresting mechanism which should be worthy of the serious consideration of the Air Ministry.

As Mr. Dowty points out, at present the Fleet Air Arm does not use an arrester for deck-landings, and consequently only machines with a very low landing speed can be used, which means a correspondingly low limit to their maximum flying speed. He also develops the idea, which is commendable as well as novel, that arresters permitting the use of very small aerodromes would be of great use to the land-going section of the R.A.F. He proposes to argue that catapults similar in design to those now being successfully used by the U.S. Navy, and adequate arresting gear, could be designed for transport to any small space available as a temporary landing ground.

One cordially agrees with this idea, for thus there would be no need for the enormous aerodromes which are now necessary on active service, especially for short range fighters which have to operate from aerodromes close up to the fighting line. Moreover, in mobile war, such as we shall have in the next big fight, there will be no time in which to prepare elaborate aerodromes.

Gun-powder catapults could be transported almost as easily as fire-escapes, and landing-platforms with arresting gear would be no more difficult to transport than is the pontoon equipment of a company of the Royal Engineers. One commends Mr. Dowty's idea to the High Authorities and one recommends readers to go and hear what he has to say.

MILITARY EDUCATION.

The second of the series of lectures by Major W. E. de B. Whittaker, entitled "Ten Years Ago," dealing with British military operations on the Somme in 1916, was delivered on Oct. 18. In this lecture Major Whittaker described how the limited success of July 1 was followed by fierce local fighting to consolidate the British gains and to pave the way for a further attack on a more limited front in the endeavours once more to achieve the much desired break-through.

This second attack of July 15 was memorable for the fact that the Tanks were then employed for the first time, and did contribute very largely to the success achieved on this occasion.

That tanks were not used earlier, and were not produced and used in much greater strength as a main weapon of attack on the Western front, had given rise to much ill-informed and contemptuous criticism of the British Higher Command. But in fact the claims made on behalf of the tanks were as usual, wildly exaggerated.

They were a new and untried weapon, their officers and crews were without practical experience in action, and there were not enough of them in existence to permit of using them otherwise than as an auxiliary which could lighten the work of the infantry. How little they could be depended upon was shown by the fact that of less than fifty tanks available for this attack one-third failed to start with the infantry, and nearly another third either broke down or were disabled in the course of the day.

Used as they were then used, they were a valuable addition to the Army's weapons, but as a means of revolutionising or ending war they had suffered the fate of other innovations such as gunpowder, the machine-gun, gas, or the aeroplane. Each new weapon led to the development of an answer, and at the best eventually took its place as one among the many essential items of military equipment.

The third and last lecture of the series will be held at King's College on Oct. 25, at 5.30 p.m. The Chairman will be Lieut.-General Sir Archibald Montgomery-Massingberd, K.C.B., K.C.M.G. In this lecture Major Whittaker will summarise the operations on the Somme and their military and political results.

UNSOLVED PROBLEMS.

The paper on "Unsolved Aeronautical Problems," read by Mr. M. L. Bramson before the Institution of Aeronautical Engineers on Oct. 12, was entirely successful in provoking an interested and animated discussion, which was the author's avowed object.

In his introductory remarks Mr. Bramson explained that he had chosen the particular problems entirely at random, and had stated them as briefly as possible in order to leave ample room for their discussion. He also stated that when he received the first proofs of his paper he had been startled

at its brevity, and had accordingly added nearly as much again in the form of additional problems.

The problems considered by the author were:—

(1) The propulsion of aeroplanes with constant power at variable altitude—otherwise of the super-charged engine and its appropriate airscrew.

(2) The jet propulsion of aeroplanes—which if achieved will cut out the complicated mechanism of the aero-engines and airscrew.

(3) Variable surface aeroplanes—which in the light of present knowledge are probably not practical propositions.

(4) Vertical ascending and descending flying machines—to which the Auto-giro is the nearest practical approach.

(5) Fog landing—including the use of the leader-cable.

(6) Seaworthy flying-boats.

(7) The ideal aerodynamic structure, small and large—under which head the possible production of an aeroplane which is all wing and no body is shown to be a solution confined to large aircraft.

(8) The multi-engine room with ideal airscrew distribution and without engine drag.

(9) The super-altitude high-speed air-liner with constant propulsion power and air-tight fuselage.

(10) The internal combustion turbine.

(11) The Diesel aero-engine.

(12) The prevention of fire on crashing.

(13) The production of a slow steep glide for landing over obstacles.

(14) The problem of restoring public confidence in the safety of flying.

The paper itself and the large and animated discussion which followed will in due course be published in the Minutes of the Proceedings of the Institution and should prove very suggestive to all those concerned with the progress of aviation.

MOBILITY IN EMPIRE DEFENCE.

Speaking on "Some Aspects of Imperial Defence," at the City of London Debating Club on Oct. 14, the Secretary of State for Air said that the questions of defence would take an important part in the deliberations of the Imperial Conference. He considered that a single united defence policy would result from the co-operation.

Our responsibilities were in every Continent and our political and commercial interests were in every country. It was therefore necessary to use our resources for Empire needs as a whole and not tie them down to a particular place or a particular responsibility. He did not mean that fixed defences should be abolished, but that Empire defence should be mobile.

This was one of the reasons for the development of the airship which could be used for transporting men and aeroplanes from one place to another.

The recent series of long distance Service flights had been undertaken with the idea of achieving mobility in the Air Force and would also give valuable experience to the organisation of Empire air routes.

A PRESENTATION TO SGT. ARTHUR H. WARD, A.F.M., R.A.F.

On Friday night, Oct. 15, at the Claremont Men's Social Club, White Lion Street, Islington, Sgt. Ward was given an enthusiastic reception by his fellow-members who presented to him a valuable clock.

Replying to Mr. Kennedy, of the Sports Committee, who made the presentation on behalf of the Club, Sgt. Ward said he had really called at the club for a "roo up" as usual, and did not expect such a warm reception.

He said he was delighted with the opportunity of taking part in the Sir Charles Wakefield Flight. He knew of course that the Claremont had among its members a good many who had been war-time pilots, who had, incidentally, accounted for a number of the then enemy 'planes. They would know, and he himself certainly realised, that he could claim little credit for himself in connection with the enterprise.

The aeroplane was a good one, the engine was a good one, and Mr., now Sir Alan, Cobham is a good pilot; with that combination, anyone could fly, and enjoy every bit of the 25,000 miles as he did.

His greatest regret was that his good luck should have been the outcome of the treacherous, and untimely, death of that brilliant engineer Mr. Elliott.

He paid warm tribute to Sir Charles Wakefield, whose handsome generosity made the flight possible, and also to his colleague on the return journey, Mr. Capel.

Sgt. Ward was then entertained by the club's concert party, and also contributed an item.—F. R. S.

THE ROYAL AERO CLUB COMMITTEE.

In view of the increasing work of the Aircraft Operating Co. Ltd., Major H. Hemming, A.F.C., has been obliged to retire from the Committees of the Royal Aero Club. For several months Major Hemming has devoted considerable time to the Club Committee and the Racing Committee.

The Committee of the Royal Aero Club has co-opted Sir Alan J. Cobham to fill the vacancy and Sir Alan has accepted the invitation.



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THE FIRST AUSTRALIAN D.H.50a.—The machine and the staff of the workshops of the Quantas, at Longreach.

On Aug. 18 the first D.H.50a (240 h.p. Puma engine) to be built in Australia by the Queensland and Northern Territory Aerial Services Ltd., under license from the de Havilland Aircraft Co. Ltd., was "launched" at Longreach, Queensland, by her Excellency Lady Stonehaven.

With the words, "Henceforth the new aeroplane will be known as 'Iris,' a sure-footed messenger of the gods and personification of the rainbow," Lady Stonehaven cut the ribbon securing a bottle of Australian champagne and as this broke on the aircrew boss the assembled company gave three cheers for her Excellency and for the new machine.

With the exception of the engine and certain metal parts the "Iris" is constructed entirely of Australian material. Construction was undertaken partly as a spare-time job and six months was required in which to complete the machine.

Mr. W. A. Baird, of the Longreach Workshops, was in charge of the construction work and has every reason to be proud of the way the machine has turned out and performed in her tests. From an engineering point of view a most satisfactory point is that the total weight of "Iris" compares favourably with that of imported machines.

The "Iris" on her maiden trip carried their Excellencies Lord and Lady Stonehaven from Longreach to Newcastle Waters and behaved splendidly.

All pilots speak highly of the machine and the aerodrome staff have received many congratulations.

OVER THE ALPS WITH A CHERUB.

On Sept. 24, Herr Eberhard von Conta and Dr. Ing. von Langsdorff left Munich on a Messerschmitt light monoplane fitted with a 34 h.p. Bristol Cherub III engine and on Sept. 28 they arrived in Rome, having flown over the Alps and the Apennines, during which an altitude of 14,760 feet was reached. The whole distance of over 1,000 miles was covered in 14 hrs. 20 mins. flying time.

Herr Eberhard von Conta has prepared the following report of his wonderful flight, which must rank as one of the most notable cross-country flights of a light aeroplane.

The flight began at 09.20 hours on Sept. 24 after a considerable delay caused by the German authorities taking six weeks to obtain the necessary official papers.

"Before reaching Innsbruck," writes Herr von Conta, "I was already flying over a dense cloud bank which led me towards the chain of mountains. On reaching Innsbruck I had already attained a height of 13,000 ft. with the engine running at 2,730 r.p.m.

THE FIRST AUSTRALIAN D.H.50a.—A view of the machine in the workshops of the Queensland and Northern Territory Aerial Services Ltd., at Longreach, Queensland, taken just prior to the launching and christening ceremony by Lady Stonehaven on Aug. 18. The "Iris," as she was christened, has since been placed on service on the regular Quantas air routes. Lord and Lady Stonehaven flew in the machine from Charleville to Newcastle Waters, a distance of 1,200 miles, during their tour of the Northern Territory, and afterwards sent the following telegram to the Company:—"Lady Stonehaven and I have thoroughly enjoyed journey. I congratulate you warmly on your efficiency and reliability due to most competent pilots and mechanics. 'Iris' behaved splendidly. We hope her career commenced will be long and prosperous."



"In the Brenner Pass I had reached a height of 4,500 m. (14,760 ft.) Then unpleasant currents began to make themselves noticeable, but I flew on through snow clouds, which were travelling from west to east. Up to Franzensfeste, near Brixen, it was possible for me to keep my course to Verona.

"At Brixen, however, snow and heaping clouds prevented my flying further southwards and I was forced to turn off by the River Drave, and over the Dolomites in Austria. After 2 hrs. 40 mins. flying, I reached Klagenfurt.

"Leaving Klagenfurt, I started over Villach and crossed the Karawanken Mountains diagonally at 4,000 m. (13,120 ft.) height towards Verona. Upon entering the Po Plain this was entirely enveloped in clouds, so that with the mountains round me at a height of 4,000 m. I wound my way 1,500 m. below them through the Po valley. Upon reaching the beginning of the mountains the wind shifted and I now had a dead west wind.

"On account of the rapidly approaching darkness and the wind being against me, it was impossible for me to reach Verona, and I therefore landed the machine between an olive farm and the corn-field, at Susegana, 35 kms. north of Venedig. The Italians kept me there until mid-day on Sept. 25, as before I could proceed I had to await permission to continue my flight from the authorities at Bologna.

"At 1.20 p.m. I started for Padua in order to obtain some petrol. After 55 minutes I landed at Padua. It was the greatest difficulty to obtain benzol, and it was not until I had tried six chemists that I was fortunate enough to be able to obtain 3 litres. At 5.10 p.m. I again started, and after 65 minutes landed in Bologna. Here we had the same difficulty with benzol, and this was our chief difficulty throughout the flight.

"On Sept. 26 the weather was very bad in the morning, nevertheless an Italian Air Force officer flew off in the direction of Florence, but after 15 minutes he had to turn back, as the rain prevented his proceeding any further. The same afternoon I attempted to fly over the Apennines, height 2,000 m. (6,560 ft.). I flew along the Reno valley and came to the highest peaks of the Apennine range. A brewing storm of great heaviness compelled me to return. The differences in times between the outward and return flight into the mountains is interesting. On the outward flight I took 48 minutes, and on the return flight, including landing, only 14 minutes. The officers can confirm what a great hindrance the Apennine group of mountains is to flying. The air currents are much more terrible there than in any part of Germany.

"On Sept. 27 I had to fly over the Apennines to Florence. On starting I was at a height of 2,700 m. (8,856 ft.). Further climbing was impossible owing to the endless cloud banks. Upon entering the high range of the Apennines at the same spot where days before I had been obliged to turn back, my machine was a plaything at the mercy of the winds in the valley. I was completely forced down to about 1,000 metres, and the valley was so narrow that it was impossible for me to turn, whilst the winds sweeping the

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sides of the valley were of such strength that on several occasions the machine was jerked 90° from its horizontal position.

"Had I not an extraordinarily good engine combined with the good qualities of the Messerschmitt machine I should certainly have been dashed to pieces on the steep slopes. No words could exaggerate this incident. The official barographs are now being checked, unsealed and photographed by the authorities, and the photographs will substantiate my experience during this flight over the Appenines.

"I did not actually go to Florence, as the whole town was experiencing a heavy thunderstorm, but I flew in the rain as close to the town as I could and then I decided to fly on to a balloon station, which, however, was already known to the Italian aviators as unsuitable for landing on account of its many trenches. On landing I ran into one of those trenches, and lost my right wheel, but in 3 hours' time the damage was repaired. The flight from Bologna to Florence had taken 1 hr. 40 mins. The still pouring rain made me decide to wait till evening before attempting to reach the very small aerodrome which is situated in the centre of the town by the chief railway station.

"On Sept. 28 still rain and storm. Next day in spite of conditions being unchanged, I started in order to take advantage of the wind at the beginning, and I did not return to this place again. After flying in the rain for 28 mins. I first flew along the Arno valley, then along the canal between Arezzo and Chiusi. The only possible landing places were the railway lines or on either side of the river channel. Upon reaching the Tiber, the river which flows through Rome, landing places were again more numerous, and after 2 hrs. 45 mins. I landed safely at the Aerodrome of Centocelle, near Rome."

The arrival of the machine at Rome created the greatest possible interest and Herr von Conta was invited to take part in the competition for the *Coppa d'Italia*. It was found, however, that official participation was not possible as it was only for machines with engines from 40 to 100 h.p. The Italian authorities, however, were so interested that it was arranged for the machine to take part in the 300 kms. triangular flight on Oct. 10. And on the previous day it was flown before the Military, Naval and Civil authorities.

The following eulogies concerning the Bristol Cherub engine from pilot and passenger speak for themselves:—

"An opinion of your engine is not hard to give and it can be done in a few words—your Bristol Cherub Series III engine is the most reliable engine with which I have ever flown. This is not the opinion of a critic at his desk but the opinion of an aviator who has proved your engine throughout the Appenine flight when it was equal to all emergencies.

"(Signed) EBERHARD VON CONTA (Pilot)."

"It is a pleasure to me to inform you that the Bristol Cherub engine behaved magnificently during this flight, and I believe that the flight, which is a world's record performance as regards height for a light two-seater and which is the first crossing of the whole range of the Alps, is one of the greatest performances accomplished with your Bristol Cherub engine.

"(Signed) VON LANGSDORFF (Passenger)."

This remarkable performance, following on the success of the Cherub in the 1926 *Daily Mail* competition at Lympne and the winning of the "Aero Digest," the "Betsy Ross" and the *Dayton Daily News* trophies at the 1926 National Air Races at Philadelphia adds still further fame to the reputation of the wonderful little Cherub engine.



THE HEROES.—Herr Eberhard von Conta and Dr. Ing. von Langsdorff and their Bristol Cherub III.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Oct. 17.

Total flying for the week 34 hrs. 5 mins.

The weather was responsible for three blank days during the past week. Full advantage, however, was taken on Saturday and Sunday, when the conditions were ideal. On Sunday 42 members took the air, of whom 17 made solo flights.

During the week-end the Club was assisted in instructional flying by Mr. R. W. Reeve, of the "D.H." School.

The following members had instruction:—G. C. Bonnet, T. C. Sharwood, E. K. Blyth, Miss O'Brien, O. J. Marstrand, E. J. B. King, G. H. Saxon Mills, I. H. Saffery, L. Lester, H. M. Samuelson, Miss Fletcher, V. H. Doree, N. H. Jones, L. Martin, H. Solomon, S. C. Richards, T. L. Gardner, Sir John Rhodes, H. Kennedy, F. Clarkson, F. C. Elford, G. N. Howe, A. S. Richardson, W. L. S. McLeod, H. Spooner, M. P. Susman, J. J. Hofer, H. R. Presland, J. G. Crammond, R. A. St. John, L. G. Sykes.

The following members made solo flights:—E. K. Blyth, Miss O'Brien, E. L. O. Baddeley, Mrs. S. C. Elliott-Lynn, K. V. Wright, O. J. Tapper, A. R. Ogston, Major K. M. Beaumont, E. E. Stammers, W. Hay, J. H. Saffery, N. H. Jones, G. H. Craig, J. Barros, A. Lees, E. S. Brough, A. G. D. Alderson, N. J. Hulbert, H. Kennedy, H. Petre, W. Roche-Kelly.

The following associate members had joy-rides:—R. Andrews, Mrs. Woods Humphrey, Master Hay, L. C. Davey, G. H. Weston.

The following members have received permission to carry passengers:—A. G. D. Alderson, Major K. M. Beaumont, W. T. Hay, N. H. Jones, L. J. C. Mitchell.

It is now possible to give more joy-rides to associate members and it is hoped that associate members will now visit the aerodrome more frequently.

On Sunday E. K. Blyth carried out the tests for his Aviator's Certificate.

The Lancashire Aero Club.

Report for week ending Oct. 15.

The weather permitted flying on Sunday afternoon. Total time for week 3 hrs. 40 mins., made up as follows:—

Dual with Mr. Scholes:—Cohen 20 mins., Moore 15 mins., Blagden 15 mins., Newton 10 mins., Shires 10 mins., Stern 15 mins.

Solo:—Leeming 45 mins., Pitman 45 mins., Lacayo 30 mins., Williams 10 mins. Test 5 mins.

This record total seems to give the signal for an annual report in the approved style, thus:—

The Club has now completed a year's flying as one of the six Clubs originally approved of by the Air Ministry. Several flights have been made and the total distance flown (reckoning the average height of the aerodrome at 242 ft. a.s.l. and the barometer steady at "Stormy" throughout, and correcting the air-speed indicator readings accordingly) is approximately 59,333 miles 587 yards.

In addition, owing to the direction of the prevailing wind, a distance of 3,019 miles, one rod, pole or perch has been covered on the deck.

It is very satisfactory to be able to place on record that there have only been four crashes—one from mental defect, one from loss of direction (when taking off) and two from the pilot losing his speed in the air.

Giving the Gosport's Mono engine credit for an average of 850 r.p.m. and including starting up on cold mornings, it is estimated that the Club's engines have revolved approximately 1,612,948½ times and no mechanical trouble has been experienced except through engines refusing, or ceasing, to function in a normal manner.

In the same way, nothing larger than a wheel, or the pilot's hat, has ever fallen off any of the machines while in flight. These facts reflect considerable credit on the ground staff.

During the whole period no instructor has been injured. This reflects the greatest credit on the pupils.

Among the Club's successes at the various meetings held may be mentioned the following:—Gifts of aeroplanes by Sir C. C. Wakefield, Bart, the Directors of A. V. Roe and Co. Ltd., and Lt.-Col. Darby and the petrol distributing companies; Licence for use of aerodrome obtained after prolonged combat between opposing forces of solicitors with heavy casualties on both sides; Promise of an aeroplane from Mr. Sydney Norris; Promise of substantial help from Colonel Groves.

That is all, except that a number of people have been taught to fly and are doing so, in spite of their friends' advice.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Oct. 17.

Owing to the absence of Mr. Brown, flying has been impossible during the week, but he is now back to the Club and better things are hoped for during the next week.

[One gathers, unofficially, that Mr. Brown has been married during his short leave of absence. His many friends in the Aircraft Industry, not to mention his friends in the Flying Clubs, and those who have been beaten in competition against the Moths which he has tuned so efficiently, will wish him and his bride health, wealth and happiness.—C. G. G.]

The Midland Aero Club.

Report for week ending Oct. 16.

Total flying time 4 hrs. 43 mins.

Very bad weather with high winds restricted flying during the week. The following members were given dual instruction:—C. Fellowes, S. H. Smith, E. J. Brighton, A. B. Gibbons.

The following members made solo flights:—R. L. Jackson, G. Perry, E. J. Brighton, W. Swann, J. Brinton, H. Wills.

The Suffolk Aeroplane Club.

Readers of THE AEROPLANE who live or have interests in the Eastern Counties will be interested to hear that a Club is being formed in Suffolk by Mr. Courtney Prentice, of Ilazeldell, Tavern Street, Stowmarket. Quite a considerable amount of support has already been secured for the Club and the promoters of it intend to run it on lines similar to the Hampshire Club.

They do not intend to build a machine as yet, but propose to

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buy one for instructional purposes. The original members feel confident that they can raise the necessary money in the form of subscriptions from the membership and from those in their area who are interested in the advancement of aviation.

Undoubtedly, the promoters have a very tough job ahead, but it should be possible in Suffolk and the Eastern Counties generally to get sufficient support to run such a Club. Mr. Prentice himself, who is a pilot, will give his services voluntarily as instructor to help in keeping down expenses.

Any readers of THE AEROPLANE who are within reasonable reach of Stowmarket are invited to communicate with Mr. Prentice.

THE AUSTRALIAN FLYING CLUBS.

The Light Aeroplane Club movement in this country has led the Australian Air Board to consider a similar scheme in Australia. Approval has been granted for the formation of two Clubs, one in Sydney, to be operated by the N.S.W. Section of the Australian Aero Club, and one in Melbourne, to be run by the Victorian Section of the Australian Aero Club.

Organisation is modelled on the lines of the English Clubs and the Government assistance in the following form has been granted in each case:—(a) Loan of two D.H. Moths for two years; (b) loan of two spare Cirrus engines; (c) loan of assorted machine and engine parts; (d) use of Government sheds and aerodrome; and (e) a bonus of £20 per pupil trained by the Clubs to the standard necessary for the issue of a Private Pilot's Licence.

The Sydney (N.S.W.) Flying Club.

On Aug. 2 the Sydney (N.S.W.) Club started flying operations at Mascot Aerodrome, Sydney, with two D.H. Moths. The chief instructor is Mr. E. W. Leggatt, M.C., and the chief engineer Mr. R. E. Beeston, both of whom resigned from the R.A.A.F. to take up their present posts.

The Club charges for flying are £3 10s. per hour for instruction and £2 10s. per hour for solo flying.

It was estimated that twenty-five pupils would be obtained in the first year but within the first two weeks twenty-nine pupils were enrolled, including four women. In addition a number of well-trained pilots have joined as flying members, together with a very large number of non-flying members.

The Club has produced a mimeographed communiqué known as *The Fly Paper*, which will be issued regularly to all members.

Report for period Aug. 2-21:—

Machines in use: G-AUAI and G-AUAK.

Total flying time, 63 hrs. 30 mins., of which 42 hrs. 45 mins. was dual instruction.

Total flights numbered 188 and 69 passengers, not including dual passengers, were carried.

The first Club pupil to fly solo was Mr. G. McC. Littlejohn, who did so on Aug. 23 after 7½ hrs.' dual. Mr. E. B. Wiltshire also soloed the same day, but had the misfortune to break the axle of AJ on landing.

The demand for passenger flights by members and their friends has been so great that certain of the flying members have had to assist the instructor.

Plans for a Club-house have been approved by the Committee and the building will be put in hand immediately.

On Aug. 14 Mr. (now Sir) Alan Cobham took Lady de Chair for a flight in one of the Club Moths and later the same day several flights were raffled among the spectators, the winners being given flights with Mr. Cobham. By this means several hundreds of pounds were passed into the Club's funds.

To meet the financial burdens of the Club and to provide working capital and possibly additional equipment the Committee issued an appeal for donations. Up to Aug. 21 this fund showed a total of £712 11s.

Report for period ending Aug. 28:—

Total flying time: 23 hrs. 5 mins., of which 17 hrs. was dual instruction. Total flights numbered 74.

The instructors' time now being fully occupied no more pupils can be given instruction until vacancies occur and a waiting list has been established.

During this week Sq. Ldr. F. E. Sandford, A.F.C., who has just arrived in Australia as representative of the Blackburn Aeroplane and Motor Co. Ltd., joined the Club as a pilot member. Sq. Ldr. Sandford arranged to read a lecture to the Club on "The Naval Side of Aviation" on Sept. 20.

G-AUAI was by then serviceable again. A reserve machine, G-AUAH, had been obtained and this machine was flown over from Melbourne by Capt. F. W. Follett to take the place of AJ while the latter was out of commission. All will only be used when another machine is unserviceable. The Club Fund rose to £733 1s.

Report for period ending Sept. 4:—

Total flying time: 28 hrs. 25 mins., of which 16 hrs. 10 mins. was dual instruction.

The Club's first pupil to obtain his "A" licence was Mr. G. McC. Littlejohn, who completed his tests on Sept. 1 after only 8 hrs.' dual instruction.

The Club Fund increased to £888 6s.

ITALY—BRAZIL.

On Oct. 17 Senhor de Barros, a Brazilian, with Capt. Braga, Senhor Cunha and a mechanic left Genoa for Gibraltar on the first stage of a flight from Italy to Brazil.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 16; Tuesday, 9; Wednesday, 12; Thursday, 7; Friday, 8; Saturday, 11; Sunday, 2.

IMPERIAL AIRWAYS LTD.:

London—Paris—Zurich; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam—Berlin: Machines 37, passengers 212, freight 15 tons.

AIR UNION:

Paris—London: Machines 14, passengers 24, freight 11 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 9, passengers 24, freight 3 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 3, passengers 1.

PRIVATE:

Machines 2, passengers 1.

Total number of trips by British Machines, 39, carrying 213 passengers. Foreign Machines, 26, carrying 69 passengers.

Comparative Figures:

Week ending Oct. 17:

Machines, 65; Passengers, 262; Crews, 79; Total personnel, 341.

Corresponding week, 1925:

Machines, 96; Passengers, 346; Crews, 122; Total personnel, 468.

Corresponding week, 1924:

Machines, 86; Passengers, 370; Crews, 114; Total personnel, 484.

Corresponding week, 1923:

Machines, 84; Passengers, 232; Crews, 131; Total personnel, 363.

Corresponding week, 1922:

Machines, 89; Passengers, 261; Crews, 151; Total personnel, 412.

Corresponding week, 1921:

Machines, 66; Passengers, 226; Crews, 87; Total personnel, 313.

Corresponding week, 1920:

Machines, 90; Passengers, 160; Crews, 104; Total personnel, 264.

Croydon Notes.

Last week one stated that when a Wiro was damaged in Belgium the pilot was Mr. Warner. One now learns that Mr. A. L. Robinson was piloting the machine at the time of the forced landing though Mr. Warner was also on board. When one wrote the paragraph no authentic details were available and of the nine newspaper cuttings one received, five said that Mr. Warner was the pilot and four said that it was Mr. Robinson. One should have remembered that the daily press is more often wrong than right and so one should have accepted the word of the minority in lieu of proper facts.

The German Berlin—London service began on Saturday. A three-engined Junkers, piloted by Herr Kahlow, came from Berlin on Friday and landed overnight the other side of the Channel. It arrived at Croydon by 10.00 hrs. however and left for Berlin at 11.52 hrs. A similar machine piloted by Herr Noack arrived at 15.33 hrs. The service will run daily in future.

The Junkers has three engines of 200 h.p. each. The useful load is said to be 6,000 lbs., and the cruising speed is 90 m.p.h. This seems to be Commercial Aviation.

One does hope that when the time comes to lay the Foundation Stone, or at any rate, when the time comes to open the new aerodrome buildings, the Air Ministry will think imperially. Cabinet Ministers are very useful and ornamental pillars of Society but the laying of the Foundation Stone and the opening of the Premier Air Port of the country is surely almost a Royal function. The opening of Waterloo Station was so considered.

The Cairo—Karachi service is not, after all, to be opened in its entirety until April. From January until March only the Cairo—Gaza—Rutbah Wells—Baghdad—Basra section will be worked. Mr. Wolly Dod, one of the soundest and most able of the Croydon pilots will be chief pilot on the route. It is improbable that he will pilot the first Hercules containing Sir Samuel and Lady Maud Hoare, and retire to Cairo, but he will probably take the machine on to India.

The time has now arrived when it is well worth while for private owners to fit their aircraft with machine-guns. During the last six months Imperial Airways have carried some £7,550,000 of precious metals. A single Argosy load shot down and suitably stowed away would keep a private owner in Moths and petrol for quite a long time. One commends the idea to those piratically inclined.

An amusing story comes from Denmark where the Danes are operating air lines with Farman Jabirus. The Danish authorities complained of dangerous flying by the Dutch K.L.M. pilots. The said dangerous flying consisted of climbing too steeply when getting off the ground. Apparently the Danish Jabirus do not leap off the ground even with the vigour of the old 0/400 Handley Pages and being used to these Jabirus, the good, clean, quick take-off of the Bristol Jupiter engined Pockers evidently seemed the height of folly to the Danes.

The next move seems to be for the Dutch to object to all machines which do not get off Schiphol quickly enough.

A STRAIGHT TALK TO UNCLE DICK.

In *The Daily Mirror* of Oct. 13, Uncle Dick defends himself against the criticism made against him in *THE AEROPLANE* for allowing those valuable members of society, Pip, Squeak and Wilfred, to fly round the world in a French aeroplane with a French pilot.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Uncle Dick's excuse for exposing the Pets to such a risk is that M. Bonbonnier is paying all the expenses. Now a paper of the standing of *The Daily Mirror* could surely afford to pay the expenses of the little trip and so help British Aviation, and at any rate Sir Charles Wakefield, the Godfather of Aviation, would undoubtedly have stepped into the breach for such an important occasion. Sir Charles has never yet failed to support financially any flight of moment.

Even if M. Bonbonnier (who is doubtless heavily subsidised by the French Government), in addition to paying expenses, were to pay the Pets a heavy fee for accompanying him, one holds that Uncle Dick, who, after all, is only the guardian of these public assets, had no right to countenance the flight.

M. Bonbonnier has shown himself to be an hysterical and an erratic pilot, and he has already exposed the Pets to needless risks. Moreover, he is flying an aeroplane which, as can be seen from the pictures, does not even come up to French standards, and would cause even a blind inspector of the British Aeronautical Inspection Department to throw a fit on the spot.

It is not too late even now for Uncle Dick to do the right thing. He must cable to Pip, as the most responsible member of the party, and forbid them to ascend again until further orders. He must then raise funds and send out a certificated British aeroplane flown by a British pilot to continue the flight.

What crowds there will be at Westminster to greet them. Possibly we may yet see Sir Pip and Dame Squeak, and a medal for Wilfred. Meanwhile M. Bonbonnier is getting the Air Force Cross—very cross.

—G. D.

WHY MANCHESTER IS STILL YOUNGER!

(An addition to last week's *Insult to A.A.M.*)

Sir Alan went to Manchester; he started on a Moth,
But sussed up a sparking plug and landed on the way;
He couldn't get the thing out, so D.H.s had to bring out
Another little aeroplane for poor Sir Alan J.

(Chorus of City Fathers.)

This is Sir Alan ('ear, 'ear)

This is Sir Alan ('ave some tea)

We've 'ung out the banners but we never thought o' spanners

For Sir Alan J. Cobham, K.B.E.

MOTHS.

On Saturday and Sunday Moths were nearly as common as new Morris'es to the South of London. On both Saturday and Sunday one encountered G-EBNO, which is Capt. Geoffrey de Havilland's private machine, and certainly one saw three other different Moths and possibly four.

All this is very satisfactory, and definitely shows that the private owner is arriving. Personally one believes that by this time next year there will be fifty or more private owners, and by the end of 1928 there would be 500 if the price could be dropped to £500.—G. D.

FOR THE FAMILY OF MR. KEENE.

By permission of the management of the Crystal Palace a flying performance will be given on Wednesday, Oct. 27, in aid of the family of the late Mr. A. Keene, the mechanic who met his death in the aeroplane accident at Bookham on Sept. 2. The family are left in very poor circumstances. Mr. Lewis, of the Southern Counties Aviation Company will do the usual stunt flying, and it is hoped that other aeroplanes piloted by those who knew Mr. Keene will lend their aid to the performance.

The flying will take place between 2.45 p.m. and 3.30 p.m., and afterwards there will be a concert in the Crystal Palace also in aid of the late Mr. Keene's family. One is assured by Mr. H. J. Buckland, the General Manager of the Crystal Palace, that all the proceeds of the day, including all the money taken at the turnstiles from people who have not necessarily come to see the flying, will be given direct to Mrs. Keene without deductions.

Tickets admitting to the Crystal Palace and to the concert may be obtained from the Crystal Palace, G. V. Peck, Southern Counties Aviation Company, Brooklands Aerodrome, Byfleet, or R. H. Squire, 99, Jermyn Street, Piccadilly, W.1.

PERSONAL NOTICES.

BIRTHS.

LAING.—On Sept. 21, at Woking, to Eileen Mary (*née* Upson), the wife of Flt. Lt. A. T. Laing, R.A.F.—a daughter.

LONGCROFT.—On Oct. 16, at 6, Connaught Square, W., to Marjory, wife of Air Vice-Marshal Charles Longcroft, C.B., C.M.G., D.S.O., A.F.C., R.A.F.—a son.

LOTHERINGTON.—On Oct. 12, at the R.A.F. Depot, Uxbridge, to the wife of Flt. Off. H. A. Lotherington—a daughter.

THOMAS.—On Oct. 14, at 8, Phillimore Gardens, Kensington, to Evelyn, wife of Sq. Ldr. R. Woodliffe Thomas, O.B.E., R.A.F.—a daughter.

MARRIAGES.

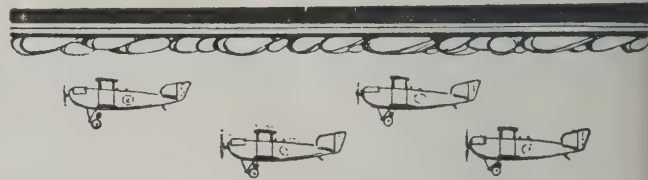
BAILEY—ARMYTAGE.—The marriage took place on Aug. 23, at St. Mary's Church, Gulmarg, Kashmir, of Sq. Ldr. L. M. Bailey, A.F.C., R.A.F., and Edna, the daughter of Mr. and Mrs. C. N. Armitage, of Melbourne, Australia.

CAHILL—HARRY.—On Oct. 12, at Christ Church, Cockfosters, Hadley Wood, Flt. Lt. Charles Howard Cahill, only son of Mr. and Mrs. Cahill, of Paris and Belfast, to Gwendolyn Margaret, only daughter of the late A. Morgan Harry, of Assam, and Mrs. Morgan Harry, of Eastbourne.

PEACEY—CLOWES.—On Oct. 12, at All Saints', Bakewell, Flt. Off. Arthur John Peacey, son of Mr. and Mrs. E. Peacey, Barrow-on-Soar, to Elizabeth Clowes, daughter of Mr. and Mrs. E. Clowes, Station House, Bakewell.

FORTHCOMING MARRIAGE.

PARK—HIRST.—The engagement is announced between Flt. Lt. Walter Henry Park, M.C., D.F.C., R.A.F., second son of the Rev. James Park, Park Stile, Broughton-in-Furness, and Edith Mary, younger daughter of Mr. and Mrs. Hirst, Rylstone, Broughton-in-Furness.



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THE AEROPLANE—OCT. 27. 1926.

THINKING IMPERIALLY.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. G. Grey

Vol. XXXI. No. 17.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

"HE HATH SMOTE FOR US A PATHWAY TO THE ENDS OF ALL THE EARTH."
("The Song Of The English."—KIPLING.)



EMPIRE EDUCATION:—Aircraft of our Mobile First Line of Defence, Air Liners, and Civilian Aircraft, lined up at Croydon for the edification and education of the Delegates to the Imperial Conference. On the extreme right is the nose of an Avro Bison (Napier), of the Fleet Air Arm. To the left of it is a Blackburn Dart (Napier). In front of that, occupying the most prominent position, is the Hawker Horsley (Rolls-Royce Condor), the R.A.F.'s new standard day-bomber. To the left of that is the D.H.50J (Jaguar) which was flown to Australia and back by Mr. Cobham. In front of the Horsley is the latest Armstrong Siskin (Jaguar), with a Gloster Grebe (Jupiter) next to it.



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THIS extraordinary weight-carrying capacity of the competition machine not only serves to indicate once more the superiority of Avro design, but makes it possible to secure by modification all the essential qualities of the privately owned aeroplane, and, moreover, those refinements which help so much towards the comfort of aerial travel, without fear of overloading.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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ON DEMONSTRATING IMPERIALLY.

There would be much interest in knowing, if it were possible, what effect the Air Demonstration at Croydon on Saturday last, Oct. 23, actually had on the various Prime Ministers of the Overseas Dominions and the representatives of the other assorted bits and pieces of the British Empire. The evident intention of the display was to help in making the British Empire air-minded. And one sincerely hopes that the affair, which was admirably staged, so far as the arrangement of the machines was concerned, by the officers of the Air Force who were told off to act as "producers," had the desired effect.

The pity is that the Air Ministry as such did not use the occasion to augment the air-mindedness of the people of London to a greater extent. On the morning of the display officially-inspired paragraphs appeared in various London papers, which, translated from official language into the vernacular, said in effect to John Citizen and his family—"Of course you can come and see this show if you like, but really it is hardly worth your while. We have put up a sort of a pen for you at the far end of the aerodrome and you won't be able to see much of the machines on the ground because they have all been laid out for the distinguished visitors from overseas. And there will be a bit of flying, but there won't be much of it. So please yourself whether you come or not."

What the notice ought to have said was:—"These Autumn afternoons are short, but we will give you as good a show as we can in the time, so please, Mr. John Citizen, will you come along, complete with family as fitted, and see what excellent value we are giving you for your money."

Barring the R.A.F. Pageant at Hendon once a year the Air Ministry's attitude towards the tax-paying public always seems to be that of the decayed gentlewoman who was reduced to selling apples for a living, and sat in a corner of the market place saying "Apples, apples" in a subdued voice, and adding in a whisper "I do hope nobody will hear me."

The Air Ministry might well take a leaf out of the Advertising Lexicon of the so-called Silent Service, and publish all its doings with that subtle air of letting out State Secrets at which the Navy is so clever. Still, one would never recommend the publication of the life story of every Squadron Leader who takes over a new command, after the manner in which appointments of Lieutenant-Commanders to ships are advertised by the Navy.

THE R.A.F. SHOW.

As a matter of fact, Saturday's show was very good indeed. The aerobatic flying by the Grebes of 56 Squadron was quite up to R.A.F. high-water mark. The Siskins of 41 Squadron, manoeuvring under radio orders given by their Squadron leader flying some distance away from them was excellent considering the bumpiness of the wind. And the advent of the

bombers of Squadrons 7 and 9 from Manston on Virginias was really most impressive. These performances were quite enough to impress anybody who did not know anything about aviation with both the skill and power of our First Line of Defence. And aeronautical enthusiasts who were interested in individual machines had a good opportunity of seeing the flying of different types, both standard equipment and new machines, as the various aircraft which were on the ground waiting to be reviewed by the Overseas representatives, flew off to their various stations later in the afternoon.

Therefore it is all the more sad that those members of the public who are already air-minded were not induced to come to Croydon and to bring as many as possible of their friends with them to see what the Air Force is giving them for its share of our heavy taxation.

Though the official programme got itself badly mixed up over the equipment of 56 and 41 Squadrons, and inflicted on its readers much horrible English as well as some lamentable examples of bad taste, it did contain a good deal of information which must have been quite educative to its readers and one hopes they profited thereby, in spite of certain inaccuracies. And the number of Service and civil machines lined up for inspection was particularly impressive.

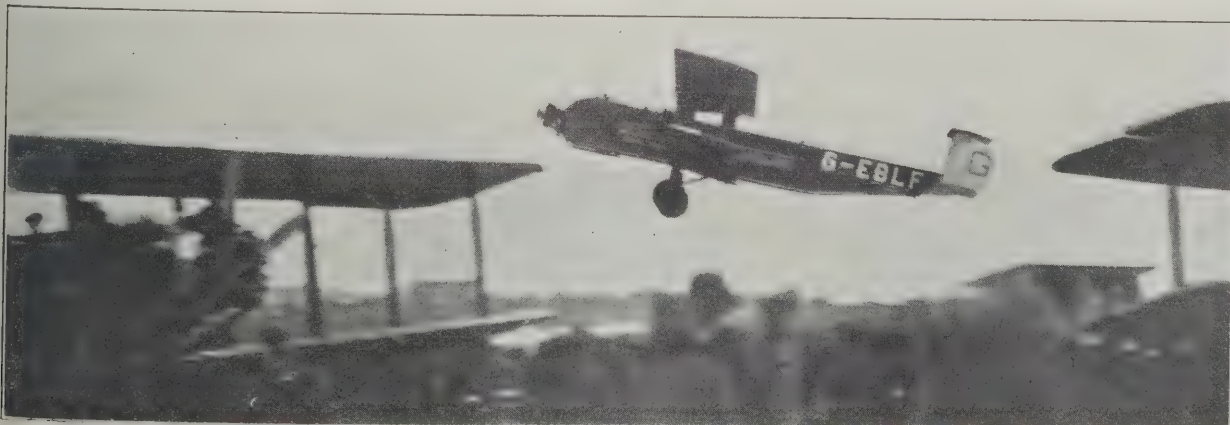
The Service types included the antiquated machines which are still in use as well as the most modern machines which have so far been issued to the Air Force. For example, the single-seaters ranged from the ancient Sopwith Snipe to the Hawker Woodcock with the Jupiter IV engine and the Gloucester Gamecock with the Jupiter VI. The day bombers included the old Liberty-engined D.H.9a, the Napier-engined Fairey Fawn, the Fairey Fox which was labelled as having the Fairey Felix engine, and the Hawker Horsley with the Rolls-Royce Condor. And the night bombers consisted of the dear old Vickers Vimy with Rolls-Royce Eagle VIII engines, the Virginia with two Napier Lions, and the latest machine to be put into production, the Handley Page Hyderabad, also with two Napier Lions.

Our only Army Co-operation machine, the Bristol Fighter with the Falcon Rolls, was on view. And the Vickers Victoria appeared as a troop carrier.

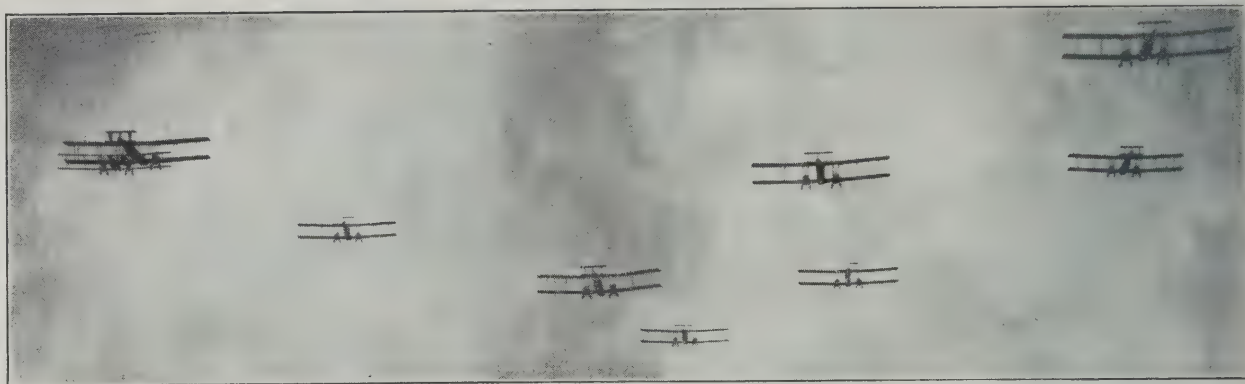
The Fleet Air Arm machines included the Fairey Flycatcher and the evergreen Fairey IID, the Blackburn gun-spotter, the Blackburn Dart torpedo-dropper, and the Avro Bison gun-spotter.

And of course the training machines included the Avro 504K with the old Mono Gnome and the Avro 504N with the Siddeley Lynx.

It was rather a pity that newer machines, such as the Fairey Firefly and the Avro Ava and the Hawker Hornbill were not brought into the show, but not being as yet Service



THE DEMONSTRATOR.—One of the Armstrong-Whitworth Argosies (three Jaguars) taking up Imperial Delegates at Croydon on Saturday, Oct. 23.



THE NIGHT BIRDS.—Vickers Virginias (Napier engines) of 7 and 9 Squadrons over Croydon on Saturday.

equipment presumably they would not have had a legitimate place in the performance.

THE CIVIL SHOW.

The civilian machines were quite interesting. The Armstrong Argosy attracted a great deal of attention on account of its size and persistent flying. But perhaps the machine which was the most interesting to the aeronautical people was the Handley Page Hamlet with its three Bristol Lucifers, which made its first public appearance. Everybody wanted to climb in and out of the nice cosy little cabin, so much so that Mr. Handley Page proposed charging a shilling a head for entrance, the proceeds to be devoted to charity, which, he remarked aside, begins at home.

The cruising speed of this machine with pilot, four passengers and 7 cwt. of luggage is given officially as 95 m.p.h., but one believes that she actually flies at well over 120 m.p.h. She is, one hears, to be fitted with three of the new Armstrong-Siddeley Mongoose five-cylinder engines, which will presumably give her a still higher performance.

It was a pity that the new D.H.66 (Hercules) with her three Bristol Jupiters was not there to show the latest Imperial Airways acquisition. But apparently she was having some slight alterations made as the result of her preliminary test.

The Handley Page Hampstead with three Bristol Jupiter engines also interested the aeronautical folk. Jupiters have been fitted so as to give the personnel of Imperial Airways Ltd. experience of running Jupiters under air line conditions, so as to accustom them to these engines on the Hercules on the Cairo-Karachi route. The machine came up from Bristol on the Saturday morning and apparently pleased the personnel quite a lot.

Apart from the Service flying, some very pretty work was done by Mr. Bulman on the Hawker Cygnet which won *The Daily Mail* £3,000 Prize, and by Flg. Off. Linton Ragg on the other Cygnet which took second place, both with Bristol Cherub engines. Also some good flying was done on sundry De Havilland Moths with Cirrus and Genet engines. The Westland Widgeon, the Short Mussel, the Avro Avian and the Blackburn Bluebird were all on view and evidently appealed to the Overseas visitors.

AN OFFICIAL OMISSION.

One part of the programme which appears to have been neglected by the official bear-leaders (Or should one call them nshers or guides?) was the inspection of exhibits which had been arranged in a Bessonneau portable shed near the level crossing. These included a model of the Croydon control-tower, showing how the work of the aerodrome is regulated, an explanation of the meteorological service, a demonstration of the system of lighting the aerodrome, an exhibit of the Armstrong-Whitworth method of steel construction, and a very fine exhibition of aerial survey work arranged jointly by the Aircraft Operating Company Ltd. and the Air Survey Company Ltd.

So far as one could discover the only Overseas Prime Minister who visited this section was Mr. Bruce, the

Australian. The others apparently stayed higher up the aerodrome to watch the flying. Considering that this air survey work is really the most important side of aviation at the moment from the point of view of our fellow-subjects overseas, it is a very great pity that the various official representatives of the Dominions and Crown Colonies were not brought specially to see the methods by which their countries can be properly explored and surveyed and mapped from the air.

There are few of the Dominions which can afford to run air forces of their own. But there is not one Crown Colony which is so small that it would not pay it to have proper air surveys done of its unexplored territory. There is no way in which the wealth of a Colony can be increased other than by developing its hitherto undeveloped territory and there is no way in which the territory which is worth developing can be located so cheaply as by air survey. So that actually education in air survey work should have been more important to the overseas representatives than even the demonstration of Service flying and of Service aircraft.

One can only hope that our two air survey companies, which joined together so amicably to provide this excellent educative entertainment for the benefit of the Overseas Representatives, will be able to arrange a similar and perhaps even more comprehensive exhibition somewhere in Central London and will be able to induce the various representatives of the British Empire who are in England for the Conference to come individually and study the work which these firms are prepared to do for the development of the Empire. This work is of such importance to the future development of the British Dominions that these representatives must not be allowed to go home without a thorough understanding of the good which their respective countries can obtain from it.

THE BEST PART OF THE DAY.

For those of us who are hardened to aviation the only real thrill of the afternoon came when the various machines which had been parked for inspection started to go home. The single-seaters in the front row went first and apparently each pilot was allowed to take off however he liked. Each in turn taxied down the line in a Northerly direction and, turning sharp to the right, got off in the teeth of the bitter East wind which was blowing.

The day bombers followed, and it seemed almost silly to think of the little Fairey Fox as being in the same category as the great Hawker Horsley. Each in her way is a singularly beautiful aircraft. The Horsley is so beautifully proportioned that she looks quite small at a distance in the air, but on the ground she is a colossal affair for a single engine. Despite her size she is, like all the old Sopwiths, obviously a real flying machine, and she impressed everybody very much.

The Fox always strikes one as being a wonderful two-seat fighter spoiled by being classified as a bomber, for as a two-seat fighter she can give points, and miles an hour, to any of the present single-seaters with which the R.A.F. is equipped. And she is so easy to fly, according to the pilots, that she might very well be used for Army co-operation. No-



THE LATEST.—The Handley Page Hamlet (three Bristol Lucifers) at Croydon.

The following successful flights have been accomplished with Napier Lion engines in 1926:

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| Cairo to Aden and back by two Royal Air Force Vickers' machines - - - | 18,000 |
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body knows how to demonstrate a machine better than does Mr. Norman Macmillan, so he took her out a good way to the East beyond the aerodrome and then came back downwind with everything wide open. The characteristic shriek of the Curtiss engine attracted attention to the machine and her amazing speed made even those uneducated in aviation take notice of her.

The little old wartime Vickers Vimy, alongside her giant younger sisters, the Victoria and the Virginia, looked almost like Stephenson's "Rocket" alongside a modern locomotive, and people who saw them against one another for the first time wondered how on earth Jack Alcock and Arthur Whitten Brown ever had the nerve to face flying the Atlantic on such a comic little kite. But the way she bounced off the ground and behaved when she got into the air gave the novices quite a respect for her.

When the turn of the Handley Page Hyderabad came, instead of turning round into the wind the pilot took her off absolutely broadside to the wind towards the enclosure to which the mere public had been exiled. Of course the machine was flying dead light, but even so she got off more

like a school Avro than like a big bomber, so lightly did she take the air.

Altogether it was a very good show, and, in spite of the fact that everybody was frozen stiff, nobody seemed in the least bored.

Owing to the direction of the wind the passenger-carrying Argosies when taking off, drove their slipstreams all over the distinguished visitors, thus, as some cynic remarked, throwing dust in the eyes of the Dominion Ministers. Perhaps that was the official intention. For certainly most of the machines which our visitors saw were thoroughly out of date.

Still, they are probably just as good as those possessed in bulk by any other air force. And one hopes that in the course of the next year or so we may develop some new and improved aircraft, especially if encouragement is given by aircraft constructors to some of the younger and brighter brains in their design departments. In any case we probably shall have some really good new machines by the time the next Imperial Conference is held. And the Great War may come first.—

C. G. C.

THE AIR DISPLAY AT CROYDON.

Admission to the inspection of Service and civil aircraft and a display of flying, arranged by the Air Ministry at the Air Port of London, Croydon, on Oct. 23, on the occasion of the visit of the Members of the Empire Conference, was confined to the guests of H.M. Government, but there was a small public enclosure and car park on the west side of the Aerodrome. The machines to be inspected were drawn up in three lines and each machine had a board in front of it giving its name and the name, type, and h.p. of its engine or engines.

The following statement appeared in the official programme:—"All Royal Air Force pilots will stand by their aircraft during the inspection and explain to visitors the functions of the aircraft equipment." If the visitors had been limited to the Dominion Premiers and members of the Government one would have had no quarrel with this arrangement. But as it happened officers of the Royal Air Force in uniform were placed in the undignified position of being used as a sort of additional exhibit to an untutored mob of less distinguished visitors who had somehow obtained admission.

No doubt the Authorities meant well and certainly the intelligent inquirer derived considerable benefit from the prompt, accurate and courteous information supplied by the officers concerned. But it was not a job for the commissioned ranks of the Service.

Incidentally it was interesting to note that while one R.A.F. officer was able to explain each machine belonging to a Fighter, Army Co-operation, or Bombing Squadron, it took

a crew of three ostentatiously Naval people of the Fleet Air Arm to explain each of the craft belonging to that branch of the Service.

A list of the machines paraded at Croydon appeared in *THE AEROPLANE* last week. The only one which was not there according to plan was the De Havilland Hercules, which was a pity.

The first part of the actual flying programme was an exhibition of aerobatics by two Grebes, of No. 56 (Fighter) Squadron. These evolutions were carried out over the far side of the aerodrome and could be watched in comfort by the spectators.

Regarding this and other events by squadrons of the R.A.F., somebody ought to be censured for a shocking display of bad taste in the wording of the official programme. In it No. 56 Squadron is described as "Most feared by the Germans, its history is one brilliant record of achievement." This ghastly phrase is preceded and followed by a stream of laudatory comment on the War service of the Squadron and ends with a list of what the author pleases to call "the greatest air fighters."

That this sort of thing should appear in an official document is almost incredible. The history of a squadron is a matter of personal pride, not public advertisement. The Official History of the R.A.F. is in course of production and all may read it—some day. Certain war histories of individual Units have also been published.

The author of this official outrage will undoubtedly have caused past members of the Squadron to turn in their graves



EDUCATING THE EMPIRE.—The Siskins of 41 (Fighter) Squadron, manœuvring under Radio-Telephonic orders at Croydon on Oct. 23. In the foreground is the Handley Page Hampstead with its new Bristol Jupiters.

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and present members to writhe in their tunics. It is practically a reversion to the era of the boosting of individual pilots by the Press, a blot which the R.A.F. is only just beginning to live down.

To revert to Croydon. The second event was a demonstration of formation flying directed by radio telephony. This was done by No. 41 (Fighter) Squadron, on Siskins, who received and carried out with skill and efficiency various commands transmitted by the Squadron Leader, who took his orders from the ground station. The precision of this formation was all the more commendable because of the extremely bumpy conditions.

It is a pity that the word "Go," which ends these orders, should sound like the last wail of a departing spirit.

No. 41 (Fighter) Squadron also suffered from the excessive enthusiasm of the programme-writer, who stated, incorrectly, that the Squadron is equipped with Grebes.

No. 7 (Bombing) and No. 9 (Bombing) Squadrons, from Bircham Newton and Manston, respectively, then flew twice across the aerodrome in formation on Vickers Virginias.

While a number of more or less distinguished visitors were fighting for joy-rides in temporarily unemployed Argosies and Wios belonging to Imperial Airways, Mrs. Elliott-Lynn gave a demonstration of the ease with which a Moth can be handled by an owner-pilot. Mrs. Elliott-Lynn wheeled a Moth out of a temporary building, unfolded the wings, started up the engine, and, after a short flight, landed, folded and re-housed the machine, in a brisk and capable manner which must have made an excellent impression on any prospective owner-pilots who may have seen it.

One of the sheds at the aerodrome was fitted up as an exhibition of the work of the meteorological Service and other aeronautical operators. A new form of flood-lighting was shown, by means of a drum lens. This had the unfortunate effect of creating blind patches for about 20 minutes in the eyesight of the unwary spectators.

Another interesting exhibit dealt with air-surveying, and was jointly arranged by the Air Survey Co. Ltd. and the Aircraft Operating Co. Ltd. The types of cameras and other instruments used were on view, as were a number of the wonderful photographs taken, and maps made, by these enterprising companies. The obvious possibilities of map-making and surveying from the air cannot fail to have impressed the Imperial Conference.

At 16.15 hours the Service aircraft began to return to their home stations, and a comparison of the speed, climb and manoeuvrability of the various types was one of the most interesting parts of the afternoon's programme.

An extraordinary number of visitors climbed into the Argosy and received with profound astonishment the information that they could not walk out again through the nose of the machine. On one occasion, when the machine was crammed with visitors, a facetious person standing near the door said "Tickets, please." Although there was no other evidence that the machine was about to leave the ground the rush for the door, accompanied by loud squawks, proved that the British public may be inquisitive, but it is certainly not "air-minded."—C. M. MCA.

THE AIR ROUTE TO INDIA.

The official opening of the air route to India will take place on Dec. 27 when the Secretary of State for Air and Lady Maud Hoare will fly in a De Havilland Hercules (three Bristol Jupiter engines) from London to Delhi via Cairo, Basra and Karachi.

Two other Imperial Airways machines intended for use on this route will leave London between Dec. 15 and Dec. 20 and accommodation for passengers will be available on both of them. One machine will fly to Basra and the fare from London will be £101. The second machine will stop at Cairo and the fare will be £50 from London.

These flights from London are incidental to the delivery of the machines at their headquarters. The regular air route at first will only be from Cairo to Basra.

THE R.A.A.F. PACIFIC FLIGHT.

On Oct. 18, Group Capt. R. Williams, D.S.O., O.B.E., Chief of the Australian Air Staff, Flt. Lt. I. E. McIntyre, A.F.C., and two mechanics of the R.A.A.F., who are flying from Melbourne, through the South Sea Islands to Samoa and back on a D.H.50a seaplane (330 h.p. A.D.C. Nimbus engine), arrived at Rabaul, Bismarck Archipelago, to the great consternation of the natives.

ITALY—BRAZIL.

On Oct. 25, Senhor de Barros and his three companions, who are attempting to fly from Genoa, Italy, to Santos, Brazil, on a Savoia 55 flying-boat (two Isotta-Fraschini Asso engines), left Gibraltar and arrived at Las Palmas, Grand Canary, later the same day.





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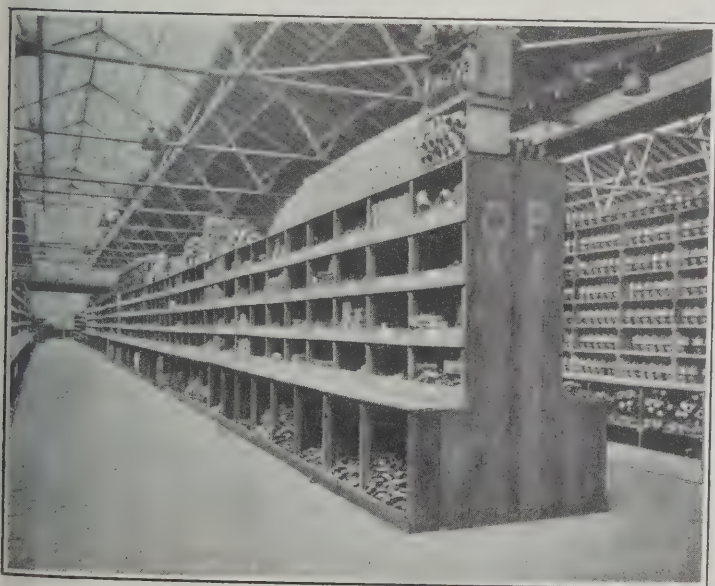
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Oct. 19.

GENERAL DUTIES BRANCH.—The following Flt. Offs. are promoted to the rank of Flg. Off.:—A. C. Watkins, W. F. Bryant (Aug. 6); W. A. Shorten, K. C. Baker (Sept. 6); F. S. O'Hanlon (Sept. 12); N. K. Howard (Sept. 17).

The following are promoted to the rank of Flt. Lt. (Oct. 13):—C. E. Wildman-Lushington, Capt., R.M., Flg. Off., R.A.F.; A. G. Elliot, Lt., R.N., Flg. Off., R.A.F.

The following are placed on half-pay, Scale B:—Flt. Lt. A. T. Laing, from Oct. 7 to 30 inclusive; Flg. Off. F. W. C. Beaumont (Oct. 21). The following are transferred to the Reserve:—CLASS A: Flg. Offs.—R. S. Higgins (Oct. 15); C. Sutton (Oct. 16). CLASS B: Flt. Lt.—A. J. Osborn (Oct. 21).

The following relinquish their temp. comms. on return to Army duty (Oct. 16):—Flg. Offs. (Hon. Flt. Lts.).—E. L. O. Baddeley (Capt., Oxf. and Bucks L.I.). L. F. Marson, M.C. (4th/7th Dragoon Guards). Flg. Offs.—G. V. Carey (Lt., Devon Regt.), P. J. Chambers (Lt., Border Regt.), C. F. Ellicott (Lt., Dorset Regt.), J. P. Huffam, V.C. (Lt., D. of Wellington's Regt.), G. C. Oldham (Lt., Queen's Royal Regt.).

Flg. Off. E. A. C. Bushell relinquishes his S.S. comn. on account of ill-health (Oct. 20).

STORES BRANCH.—The following are granted perm. comms. as Plt. Offs. on probation, with effect from the dates indicated and with seniority of Oct. 9:—J. E. R. Sowman, O. W. T. Rogers, A. A. Quayle, W. A. D. Collingwood, M. S. Shapcott, C. I. Fry, R. B. Horstmann, R. B. Brown, R. S. Sawyer, T. I. Liff, W. A. Stagg, C. J. Nobbs, H. D. Jackman, E. H. Walker, E. G. Northway, W. G. S. Wood (Oct. 9); C. L. Gilbert (Oct. 16). Flt. Lt. D. Mitchell is placed on the retired list (Oct. 16).

MEDICAL BRANCH.—Flt. Lt. H. McW. Daniel, M.D., is promoted to the rank of Sq. Ldr. (Oct. 9). Flg. Off. A. Harvey, M.B., is promoted to the rank of Flt. Lt. (Oct. 7).

RESERVE OF AIR FORCE OFFICERS.—The following are confirmed in rank:—Flg. Off.—W. Steele, D.F.C. (Oct. 13). Plt. Offs.—O. M. Sheil-Small (Oct. 7); L. W. Van Oppen (Oct. 19).

Appointments.

Week ending Oct. 25.

GENERAL DUTIES BRANCH.—Wing Commanders H. le M. Brock, D.S.O., to Station H.Q., Kenley, to Command, 21/9. W. L. Welsh, D.S.C., A.F.C., to Air Ministry (Directorate of Operations and Intelligence), for Air Staff duties, 21/9. C. F. A. Portal, D.S.O., M.C., to R.A.F. Depot, Uxbridge, pending disposal, 21/9.

Squadron Leaders A. F. A. Hooper, O.B.E., to R.A.F. Base, Gosport, on transfer to Home Estab., 25/9. A. H. Stradling, O.B.E., to H.Q., Egypt, 8/10.

Flight Lieutenants H. O. Long, D.S.O., to No. 30 Sqdn., Iraq, 1/10. R. Harrison, D.F.C., to Aircraft Depot, Iraq, 1/10. R. L. Sweeney, to H.Q., Iraq, 30/9. F. E. C. Benstead, to No. 4 Arm. Car Coy., Iraq, 30/9. W. R. Cox, M.C., A.F.C., and H. E. Walker, M.C., D.F.C., to No. 503 Sqdn., Waddington, 5/10.

Flying Officers E. J. Foulkes-Jones, to No. 1 F.T.S., Netheravon, 14/10. T. W. S. Brown, to remain at No. 207 Sqdn., Eastchurch, instead of to A. and G.S., as previously notified. C. Walker, to No. 1 F.T.S., Netheravon, 17/10. W. A. D. Brook, to H.Q., Iraq, 15/10. (Hon. Flt. Lt.) F. L. Woledge, to H.Q., Iraq, 1/10. V. G. H. Ger, to No. 47 Sqdn., Egypt, 7/10. G. N. J. Stanley-Turner, to Aden Flight, 1/10. A. L. Ottway, to No. 6 Arm. Car Coy., Iraq, 1/10. C. B. Wincott, to No. 402 Flight, Mediterranean, 15/10. O. B. Swain, to A. and G.S., Eastchurch, 18/10.

Pilot Officer J. M. S. Knight, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/9.

MEDICAL BRANCH.—Flying Officer W. A. Beck, M.B., D.P.H., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 3/10. Flying Officer (Dental) V. G. Pedley, to R.A.F. Depot, Uxbridge, on appointment to a Temp. Comn., 18/10.

STORES BRANCH.—Wing Commander C. G. Smith, O.B.E., to H.Q., Air Defence of Great Britain, Uxbridge, for Stores Staff duties on transfer to Home Estab., 12/11. Flight Lieutenant F. Whilton, D.C.M., to H.Q., Cranwell, 14/10. Flying Officers A. E. Connolly, to H.Q., Cranwell, on transfer to Home Estab., 25/10. C. P. Wingfield, to No. 503 Sqdn., Waddington, 5/10. Pilot Officer C. L. Gilbert, to H.Q., Cranwell, on appointment to a Perm. Comn. (on probation), 16/10.

ACCOUNTANT BRANCH.—Flying Officers J. J. T. Rose, to R.A.F. Depot, Egypt, 1/10. J. Charles, to Heliopolis Details, Egypt, 7/10.

CHAPLAINS' BRANCH.—The Rev. M. J. Eland, to H.Q., R.A.F., Halton, 26/10.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Moascar, Ismailia, Egypt, to a Bristol Fighter of No. 208 Squadron, Moascar, on Oct. 18, Flg. Off. Vincent Bingham Bingham-Hall, M.C., the pilot of the aircraft, and P.O. 15909 Marine William Higgins, R.M., were killed.

The Air Ministry regrets to announce that as the result of an accident at sea, 5½ miles north of Valetta, Malta, to an Avro Bison of No. 423 Flight, on Oct. 21, Hugh Nelson Lay, Lieut. R.N., Flg. Off., R.A.F., the pilot of the aircraft, Lieut. Joseph Ennis Slater Anderson, R.N., Lieut. Henry Leigh Carslake, R.N., and No. J.81144 Telegraphist Robert William Gibbs, R.N., were drowned.

The Auxiliary Air Force.

No. 601 (County of London) (Bombing) Squadron, Auxiliary Air Force, has been awarded the Air Council's bounty for general efficiency. This bounty is awarded every year to the best Squadron of the year in the Auxiliary Air Force.

No. 601 Squadron is stationed at Northolt and is commanded by Sq. Ldr. the Lord Edward Grosvenor.

Air Action in Iraq.

A *Reuter* message from Baghdad, dated Oct. 22, states:—British aeroplanes and armoured cars have been in action at Rutba, midway between Baghdad and the Mediterranean, near a lonely post three hundred miles from here.

Further retribution has been visited on the Arab raiders from Syria, who some weeks ago attacked the Kuwait village of Jahrah and stole a thousand camels. It was known that the raiders would endeavour to make their way back to their own territory via Rutba, and preparations were made to give them a warm reception.

News has now reached here that aeroplanes and armoured cars, while making a reconnaissance from Rutba on Wednesday last, encountered a large party of raiders and attacked them immediately. The Arabs fled, but a number of prisoners were captured and a hundred camels recovered.

It is believed that other parties of raiders are hiding in the vicinity of Rutba. The operation is continuing. There is no need for anxiety in regard to the safety of the trans-desert motor route, the presence of a British force at Rutba being considered an ample guarantee of security.

Air Gunnery and Bombing.

Air Ministry Notice to Airmen No. 65 of 1926 calls the attention of pilots of aircraft to air gunnery and bombing practice which will take place during October in the following areas:—The Wash, Holbeach, Lincoln, and Stert Flats, Bridgwater, Somerset.

A Manston Warning.

Air Ministry Notice to Airmen No. 67 of 1926 states:—Pilots approaching Manston aerodrome with the intention of landing must not fly across the roads which intersect the aerodrome at a height of below 50 feet (15 metres), owing to the possibility of danger arising to the general public when these roads are crossed at a low altitude.

The R.A.F. Memorial Fund.

At a meeting of the Executive Committee of the R.A.F. Memorial Fund, on Oct. 13, the Committee decided to continue the custom of laying a wreath provided by the Fund at the foot of the R.A.F. Memorial on the Victoria Embankment, on Nov. 11—Armistice Day.

This ceremony will be performed on behalf of the Committee by Air Chief Marshal Sir Hugh Trenchard, Bart., G.C.B., D.S.O., Chief of the Air Staff.

Relations and friends of the R.A.F. are invited to be present at the ceremony, which will only last a few minutes and will probably follow the ceremony at the Cenotaph.

R.A.F. SPORTS AND PASTIMES.

Rugby Football.

R.A.F., Cranwell, v. Blackheath.—The R.A.F., Cranwell, beat Blackheath (Wednesday) on Oct. 20, by five goals and a try (28 points) to three goals and three tries (24 points). Flight Cadet Marson converted five tries for the R.A.F.

Hockey.

R.A.F., Halton v. R.A.F., Uxbridge.—Halton beat Uxbridge, at Uxbridge, on Oct. 13, by three goals to one. The Halton forwards showed excellent form and the team were leading by one goal to nil at half-time. The goals for the winners were scored by A.A. Mitchell, Flg. Off. Cook and A.A. James. Flt. Lt. Hampton scored for Uxbridge.

Boxing.

The Eighth Annual Wakefield Competition for teams of Novice boxers representing R.A.F. Stations will take place at Henlow Camp, on Oct. 27 and 28. This is the first year that the Competition has been inter-Station instead of inter-Group. Divisional eliminating competitions have been fought and 133 novice boxers are included in the surviving teams.

The Services Golf Championship

Sq. Ldr. C. H. Hayward, R.A.F., the holder of the Services Golf Championship, was beaten by the Rev. E. S. Ulyat, the R.N. and R.M. Champion, at Camberley Heath, on Oct. 8, by five strokes.

Athletic Sports at Shaibah.

The annual athletic sports meeting of No. 84 (Bombing) Sqdn., R.A.F., was held on Sept. 18.

The Victor Ludorum Cup presented to the best athlete of the day was won by L-AC. Margetts, to whom congratulations are due for a splendid performance.

At the conclusion of the events, Group Capt. Rathbone D.S.O. (Station Commandant, Basrah Area) presented the prizes to the successful competitors, and in a short speech congratulated the Squadron upon the very creditable manner in which its members had acquitted themselves.

The Band of the 4/19th Hyderabad Regt. played during the meeting, by kind permission of Col. J. H. Britton and Officers.

The following were the results:—

100 Yards Final.—(1) L-AC. Nicholson, (2) L-AC Walker. One Mile Flat.—(Team and Individual): (1) L-AC Margetts, (2) L-AC Thrave, (3) L-AC Slater. Putting-the-Shot.—(1) Flg. Off. Nicholl, (2) L-AC Wiles. 220 Yards.—(1) L-AC. Nicholson, (2) Sjt. McKay. Officer Race.—(1) Flg. Off. Glenn, (2) Flt. Lt. Barratt.

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High Jump.—(1) L.-AC. Walker, (2) Sgt. McKay. *Tug-of-War (Final).*—M.T. v. H.Q.: Winners, M.T. and W.T. *Sjts.' Race.*—220 Yards (Handicap): (1) Sgt. Beckett, (2) W.O.I. Copper, (3) Sgt. McKay.

Three-Mile Flat.—(Team and Individual): (1) L.-AC. Margetts, (2) L.-AC. Thraves, (3) L.-AC. Slater. *Long Jump.*—(1) L.-AC. Frier, (2) L.-AC. Staples. 100 Yards (Open).—(1) L.-AC. Woods, (2) Cpl. Haines. (Both from Stores Depot, Basrah.) *Sack Race (Open).*—(1) L.-AC. Walker, (2) L.-AC. Milton.

880 Yards.—(1) L.-AC. Margetts, (2) L.-AC. Thraves, (3) AC.1. Honor. *Throwing the Cricket Ball.*—(1) L.-AC. Coles, (2) L.-AC. Thomas. *1 Mile Medley Relay (Open).*—Winners, Stores Depot Team: Cpl. Haine, L.-AC. Woods, and AC.2. Langridge. 440 Yards.—(1) AC. Nicholson and AC.1. Honor (dead-heat). Nicholson won the toss and Honor was presented with a special prize awarded by the Commanding Officer.

Indians' Race.—(1) Cumal Singh, (2) Sindr Singh. This event was arranged for the detached Co. of the Hyderabad Regt. stationed at Shaibah.

Inter-Flight Team Events.—One Mile Relay, One Mile Team, and Three-Miles Team.—Winners, "A," "B," and "C" Flights. (All three races.) The competitors in the above Team were: Foster, Margetts, McMillian, and Slater.

Putting-the-Shot (Team).—Winners: H.Q. Flight—L.-ACs. Frier and Parfitt, and AC. West. *Long Jump (Team).*—Winners: H.Q. Flight—L.-ACs. Frier, Parfitt, and Staples. *High Jump (Team).*—Winners: Miscellaneous Flight—L.-ACs. Walker and Ruston, and AC. Simkin. *One Mile Medley Relay.*—Winners: "A," "B," and "C" Flights—L.-ACs. Foster, Margetts, McMillian, and Slater.

These events were contested for the Inter-Flight Shield, which was won by "A," "B," and "C" Flights, who scored 16½ points, H.Q. Flight being runners-up with 15 points.

No. 18 Squadron Re-union.

The fifth annual re-union and dinner of No. 18 Squadron, R.A.F. and R.F.C., Old Comrades' Association, will take place on Saturday, Nov. 6, at the Three Nuns Hotel, Aldgate, at 6 p.m.

Application for tickets, 5s 6d. each, should be made to J. Fuller, 53, Berkhamstead Avenue, Wembley.

The Three Nuns Hotel adjoins the Aldgate Metropolitan Railway Station and accommodation may be booked there for those who wish to stay the night in London.

Cinquante Quatre.

"Cinquante Quatre." Flying Corps Song Book. With seven illustrations. Privately printed in 1917. Published 1918. (Bowes and Bowes, Cambridge, 2s. 6d. net.)

This little book consists of parodies on the popular songs of 1917 and thereabouts. It is not out of print, as appears to be the general impression, and may be obtained from the publishers. Considered as songs the contents strike one as pretty poor stuff, but to many they will recall old associations, and as one has been asked for the book there is evidently a demand for it.

MILITARY EDUCATION.

The third and last lecture by Major W. E. de B. Whittaker dealing with the Military operations on the Somme was delivered at King's College, on Oct. 25. Lieut.-Gen. Sir Archibald Montgomery-Massingberd, K.C.B., K.C.M.G., was in the Chair.

Major Whittaker said that although the chief purpose of the Battle of the Somme was not attained the constant pressure by the British wore down the German defence and sowed the seeds of ultimate victory.

Describing the attack on Thiepval which fell at 8.30 a.m. on Sept. 27, he said that this ridge was of special importance in that it governed German positions which, if they were evacuated, would cause the enemy to retire into unprepared positions. An attack by a tank and an aeroplane on one trench resulted in 370 prisoners being taken with only five British casualties.

Major Whittaker went on to give a concise account of the operations which were forced to an end by the break in the weather at the beginning of November. The result of weeks of rain was that the ground was a morass and during the consequent cessation of all action the Germans were able to strengthen their defences. He gave a list of the British casualties during these operations and the number of guns, etc., used.

He said that the main result was to relieve the pressure on Verdun. In England propaganda accounts of the battles caused temporary cheerfulness followed by depression when the casualty lists came through. In France the public believed that General Foch had made a great effort which had been spoiled by British dilatoriness. French losses were slight. In Germany there was great pride in the brilliant defence against great odds. But the moral of the troops was destroyed. They could not counter-attack because all their reserves were needed for defence.

Lieut.-Gen. Sir Archibald Montgomery-Massingberd said that Major Whittaker's general conclusions were absolutely correct. He thought that all the mistakes and difficulties of the Great War might have been foreseen by studying the American Civil War. Undoubtedly the German moral was broken in 1916 on the Somme, although the results were not seen until 1917 and 1918. He said that General Rawlinson's diary would be published next year and would be an

extremely valuable contribution to military history. The Battle of the Somme was justified by the later results.

Referring to the relations between Statesmen and Generals, he said that the Secretary of State for War in 1916 did not understand war and would not consult military authorities. He said that French Generals were continually insecure. As an example of this he said that General Joffre was removed from the Supreme Command for saying that the offensive spirit of the French Army was broken at Verdun.

He also described the difficulties caused by allied attacks and said he thought the attack on July 1 was not more successful because the French insisted on timing the attack for 7.30 a.m. instead of daybreak.

In conclusion he said that a strong standing Army was the best insurance a country could have against war.

THE R.Ae.S. AND SIR ALAN COBHAM.

On Oct. 25, the Royal Aeronautical Society under its new Chairman, Colonel the Master of Sempill, opened its 1926-27 session with a *Conversazione* at the Hotel Victoria. The event of the evening was a lecture by Sir Alan Cobham on his voyage to Australia and back.

Air Vice-Marshal Sir William Brancker, President of the Society, introduced the lecturer in his usual effective manner, and announced that Sir Alan had been elected an Honorary Fellow of the Society. Sir William also read a sympathetic letter from his Royal Highness the Duke of York, Patron of the Society, which letter runs thus:—

Dear Sir Sefton Brancker,—I very much regret that I will be unable to be present at the Royal Aeronautical Society's reception on Oct. 25. I am proud to feel that the Prince of Wales and I share between us the honour of being Patrons of the oldest aeronautical body in the world, and it would have given me the greatest satisfaction to be able to attend the reception.

The work of the Society is growing constantly in magnitude and importance. Its position can be maintained only if all those connected either directly or indirectly with aeronautics give their fullest support. The munificent gift of the Guggenheim Trust Fund of the U.S.A. will in a measure enable the scope of the Society's activities to be widened, and I hope that those public-spirited persons or bodies who have in the past done so much to help forward our other great societies will give assistance so that a substantial endowment fund may be established.

Yours sincerely,
ALBERT.

Sir Alan explained that he had been asked to speak technically as the R.Ae.S. is a technical society. Consequently, his preliminary technical remarks on the running of his machine and engine added to his story of the great flight made the lecture rather long and Sir Alan was compelled, much to the regret of his audience, to race through the latter part of the lecture. Apart from that one can only describe it as a jolly good story.

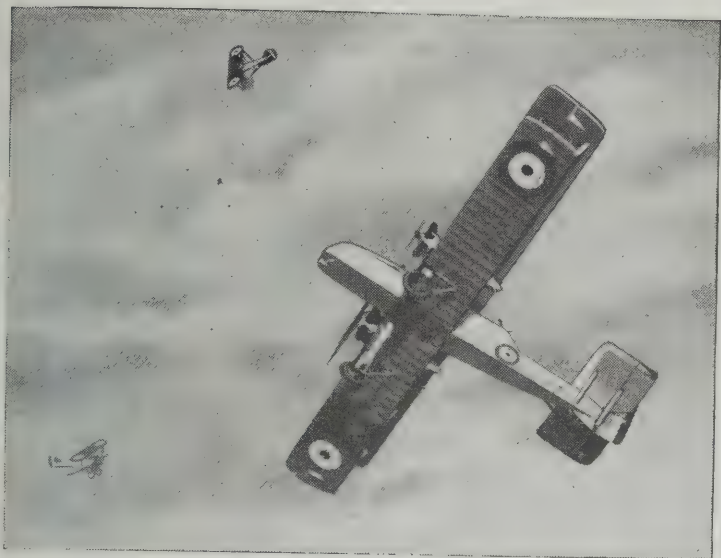
It was illustrated with a number of really beautiful lantern slides. Those less-known parts of the route, such as the Basra—Karachi stretch and the Calcutta to Port Darwin stretch were particularly interesting. And Sir Alan described each picture in a charmingly unaffected way which was thoroughly enjoyable. He evidently felt the difference between being compelled to make a serious propagandist speech after a heavy lunch or dinner and being given the opportunity of chatting about his experiences to an audience who might reasonably be expected to know something about flying.

After the lecture Sir Alan told one that the photographs had been taken by the various members of his party on the way out and back without anybody particularly acting as official photographer, and regretted that some of the pictures that he most wanted to get had been spoiled by over-exposure, owing to the shutter of his camera having been set to work slowly. This is certainly a pity, for if the pictures that he wanted were any better than those which he got they must have been surprisingly good.

As it is the pictures and the accompanying story make a most interesting entertainment and one hopes that he will tell it to a good many audiences in this country before he starts his tour abroad, for one cannot imagine anything more calculated to impress the idea of aerial communication between the British Dominions than this particular lecture. It is in fact far more interesting than his lecture on his Cape-and-back flight, because it shows how air transport links up places about which everybody knows something, and so it seems much more personally real than a series of pictures of African jungles and so on.

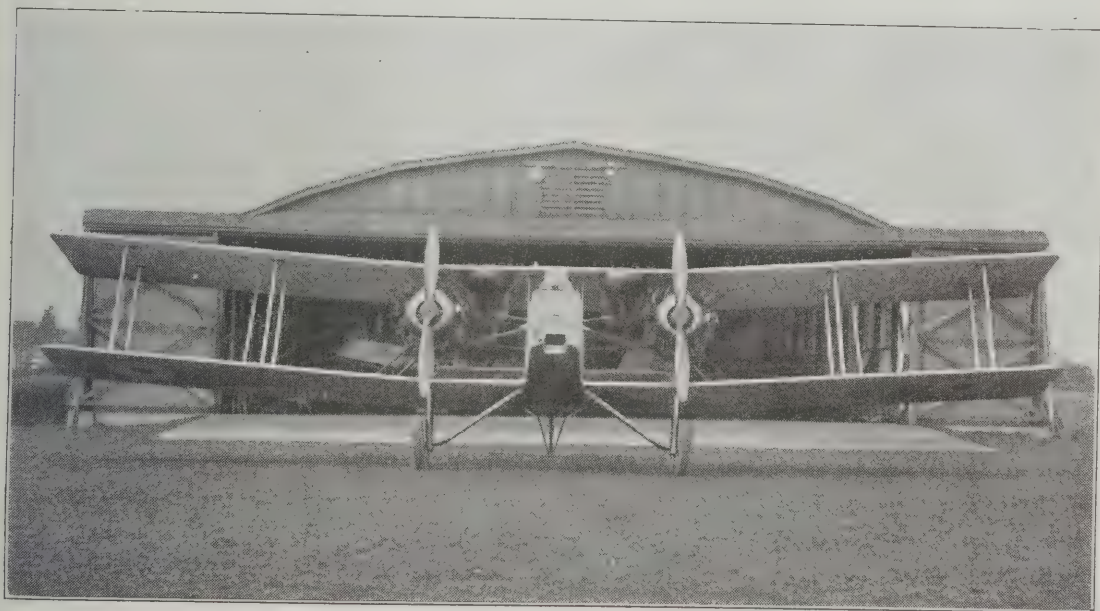
As a lecturer Sir Alan takes a lot of beating. Sitting right at the back of a large room, where hearing was hindered by impassioned conversation of waiters preparing a buffet behind screens in an adjoining room, and by what appeared to be bombing practice in progress in the room above, one was able to grasp even the most rapid of Sir Alan's deliveries. One strongly advises any reader who has an opportunity of hearing this lecture to go and do so.

After the lecture there was a very good buffet supper, for those who were strong enough to fight for it, and thereafter the assembled scientists proceeded to dance. Which, one hopes, may be taken as a sign of a new spirit in this grave and reverend Society.—C. G. G.



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THE PREMIER ON IMPERIAL DEFENCE.

In his speech at the opening session of the Imperial Conference on Oct. 19, the Prime Minister said:—

In the field of Imperial defence there has been steady, if unobtrusive, progress towards improving the facilities for co-operation, if the necessity should unhappily arise. The long-drawn-out controversy of the early part of this century between the advocates of Dominion Navies and Dominion contributions to a single Imperial Navy has long since died away in the natural and inevitable course of Constitutional development. The principle of Dominion Navies is established, and is not merely accepted, but is wholeheartedly endorsed, by the Admiralty. I take this opportunity of warmly welcoming the step recently taken by India in establishing the Royal Indian Navy.

At the end of this year, in accordance with the provisions of the Articles of Agreement of 1921, we shall be entering upon a conference with representatives of the Irish Free State with a view to the undertaking by the Free State of a share in her own coastal defence. A regular system for the interchange of British and Australian cruisers is now in operation. Our Navies, on which we depend in the last resort for our corporate existence, remain—and I venture to say will continue—one of the strongest possible bonds that unite us.

In the land forces also much has been done to facilitate co-operation. At the present time units and formations throughout the Empire are organised in general on similar lines. Broadly speaking, similar patterns of weapons are in use, and a human bond is created by a system of interchange of officers and by personal visits of officers to and from the Dominions.

In the Air arm, whose actual and potential importance as a link between us, not only from the point of view of Imperial defence, but also from that of Imperial communications, has been strikingly demonstrated by recent long-distance flights, contact and co-operation are being secured by corresponding methods.

In all these services common doctrine in matters of defence is provided for by special facilities for the attachment of officers to colleges and other technical establishments and we hope to see this process extended.

THE SCHNEIDER TROPHY CONTEST.

The Italian team to fly in the Schneider Trophy Race on Nov. 11, at Hampton Road, Virginia, will be chosen from Commandante Guasconi, Major de Bernardi, Lieut. Bacula, and Lieut. A. Ferrarin, all pilots of the *Regia Aeronautica*.

The Schneider Trophy Contest was originally to be held on Oct. 24, but at the request of the Italian authorities, this date was altered to Nov. 11. This request was partly due to an accident with one of the Italian entrants which resulted in the death of Commandante the Marchese Centurione.

The two machines to fly in the race will be Macchi 39 low-wing float monoplanes fitted with Fiat engines. It has been reported that one of the entries would be fitted with a Napier Lion engine, but this has been contradicted by the Macchi company. The third machine will be held as reserve.

NEXT YEAR'S RACING.

A Joint Meeting of the Royal Aero Club Racing Committee and the Society of British Aircraft Constructors was held at the Royal Aero Club on Oct. 20, when the following were present:—

Royal Aero Club.—Air Vice-Marshal Sir W. S. Brancker, K.C.B., in the Chair, Lieut.-Col. W. A. Bristow, Lieut.-Col. M. O. Darby, Lord Edward A. Grosvenor, Major R. H. Mayo, Capt. C. B. Wilson, M.C., and Howard T. Wright. *Society of British Aircraft Constructors*.—Squadron Commander James Bird, H. Burroughes, F. M. Green, John Lord, T. O. M. Sopwith, C.B.E., and H. T. Vane. In attendance were H. E. Perrin, Secretary, R.Ae.C., C. V. Allen, Secretary, S.B.A.C.

The Club submitted proposals for the Races for 1927, which include the King's Cup, the Aerial Derby and the Grosvenor Challenge Cup. It was decided to consider these proposals further next month.

THE R.Ae.C. MONTHLY DINNERS.

The Royal Aero Club will begin its Winter Monthly Dinners on Wednesday, Nov. 10. These Dinners are held at the Club and Members wishing to attend are requested to notify the Secretary as early as possible, as the accommodation is limited to 60.

The subject for discussion has not yet been definitely settled.

HYDROGEN AS A FUEL.

On Thursday, Nov. 4, at the Royal Society of Arts, at 7 p.m., Mr. G. F. Mucklow will lecture to the Royal Aeronautical Society on "Hydrogen as an Auxiliary Fuel for a Solid Injection Engine." This meeting is a joint one with the Institution of Automobile Engineers.

This important paper deals with experiments carried out in the engineering laboratories of the University of Manchester on a Crossley solid-injection oil engine in which small quantities of hydrogen or coal-gas were introduced along with the air supply to the engine. Many tables and maps are given showing in great detail the results of these experiments. As the author points out, "In an airship flight as the supply of oil is consumed a corresponding amount of hydrogen must be released, and it thus becomes of importance to determine whether this waste hydrogen may be utilised to replace a portion of the oil fuel supplied to the engines."

In summing up the paper the author states: "Hydrogen or coal gas can be used satisfactorily in the type of engine carried. No trouble was experienced due to pre-ignition or other causes and the engine appeared to run more sweetly when gas was being used."

At this meeting refreshments will be provided at 6.30 p.m.

THE ROYAL AERO CLUB AND THE SEVEN AERO CLUB.

A good many people think that it is time for more to be heard about the disqualification of the Westland Widgeon belonging to the Seven Aero Club by the Stewards of the Meeting during the Light Aeroplane Competition at Iympne.

It will be remembered that the Seven Club was charged with having changed a rocker-arm in the A.B.C. engine of the Widgeon when brought down in a forced landing away from the aerodrome. It is not worth while here to recount the full details of the case, but the machine was disqualified and consequently the members of the Seven Club were left under suspicion of having deliberately attempted to deceive the Stewards of the Meeting.

As officers of the Royal Air Force they cannot be allowed to remain under this suspicion. Either the Royal Aero Club Stewards must justify their action, in which case the affair should be taken up by the authorities of the Royal Air Force, or else the officers who compose the Seven Club must exact a full and public explanation from the Stewards.

If that rocker-arm was changed it is equivalent to doping or pulling a horse on a racecourse and it is a very serious offence. Both for the honour of the Air Force and for the reputation of the sport of flying the affair cannot be allowed to rest where it is.—C. G. G.

AWARDS TO INVENTORS.

The Royal Commission on Awards to Inventors, on Oct. 18, heard a claim by Rear-Admiral Murray F. Sueter, M.P., Lt.-Col. C. L'Estrange Malone, and Mr. R. D. Hyde-Thomson (executor of the late Lt.-Col. D. Hyde-Thomson) in respect to the development of torpedo-carrying seaplanes and the gear for the carriage and release of torpedoes.

Admiral Sueter in evidence claimed that the idea of carrying a torpedo on a seaplane and discharging it therefrom originated in the Air Department, The Admiralty, while he was Director of that department, and that he and his fellow-claimants by this invention, design, and pioneer work in this matter had been of considerable service to the State and were entitled to a substantial award.

Lt.-Col. Malone gave evidence of work carried out under his command in *H.M.S. Ben-My-Chree*, which had rendered the torpedo gear used on seaplanes practicable and effective.

Mr. Trevor Watson, K.C., for the Admiralty, said that the claim was an extraordinary one, and that no innovation justifying a claim had been placed before the Commission.

The Commission reserved its decision.

THE AFGHAN AIR FORCE.

The Morning Post correspondent at Karachi in a message dated Oct. 12 states:—

Mohamed Ahsan Khan, commanding the Afghan Air Force, and Sayad Abdullah Shah, Commandant of the Kabul forces, together with an assistant of the Afghan War Office and Major Dods, Military Attaché to the British Legation at Kabul, arrived at Karachi yesterday from Quetta. This morning they visited the R.A.F. Depot and inspected the workshops. The party was entertained by the Government at Quetta on the occasion of the recent Army manoeuvres, which they inspected on land and by means of aeroplanes. They were favourably impressed by all they saw.

A HISTORY LESSON.

Generally speaking the Cinema is a horrible institution. For an ill-assorted mixture of sickening sentiment and commercial propaganda, it almost equals the London papers. But it certainly has its uses, and such films as "Mons" are sufficient reason for its existence.

Films are not for the highbrow, they are rather for those who, having ears hear not, and having eyes do not read. The "Mons" film is by far the best thing of its kind that has been done at present, and everyone should see it. The retreat from Mons is not a subject which could be adequately produced on the films even with the assistance of His Majesty's Army Council. But the producers have managed with honesty of purpose and simplicity of style to make a picture which leaves a vivid impression of the suffering and heroism of the Old Army in the Retreat.

The film is now being shown at the Marble Arch Pavilion and will be shown all over the country next month.

THE UNIVERSAL PROVIDERS.

Brown Brothers Ltd., the famous manufacturers and factors of tools and materials for cycles, motors, and aircraft, write pointing out that a large proportion of the bolts, nuts, washers, and A.G.S. parts generally, used in the D.H.50 which made the Sir Charles Wakefield flight to Australia and back, piloted by Mr. Alan Cobham, were supplied by Brown Brothers, as was done when the same machine was flown to South Africa and back and to Burma and back.

On Oct. 11 Sir Alan Cobham wrote to Brown Brothers as follows:—Messrs. Brown Bros., Great Eastern Street, E.C.

Dear Sirs,—So happy to tell you that during our whole flight from London to Australia and back, we had no trouble whatsoever with any of your products which were fitted in so many parts of our machine, every nut and bolt standing up to its job.—Congratulations.

Yours faithfully, (Signed) ALAN J. COBHAM.

SIR ALAN COBHAM'S FLIGHT TO AUSTRALIA.



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were utilised by Sir Alan Cobham on his D.H.50.J. machine during his magnificent flight across half the world, flying over many thousands of miles of ocean.

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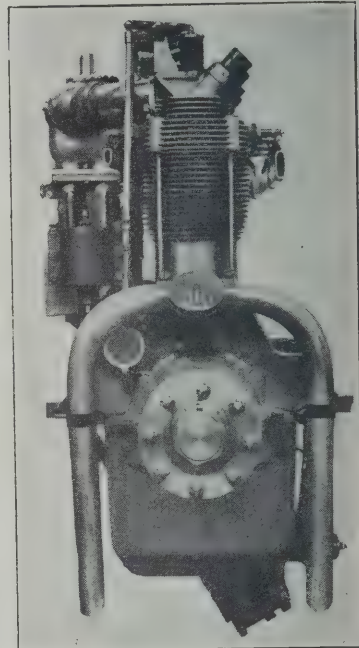
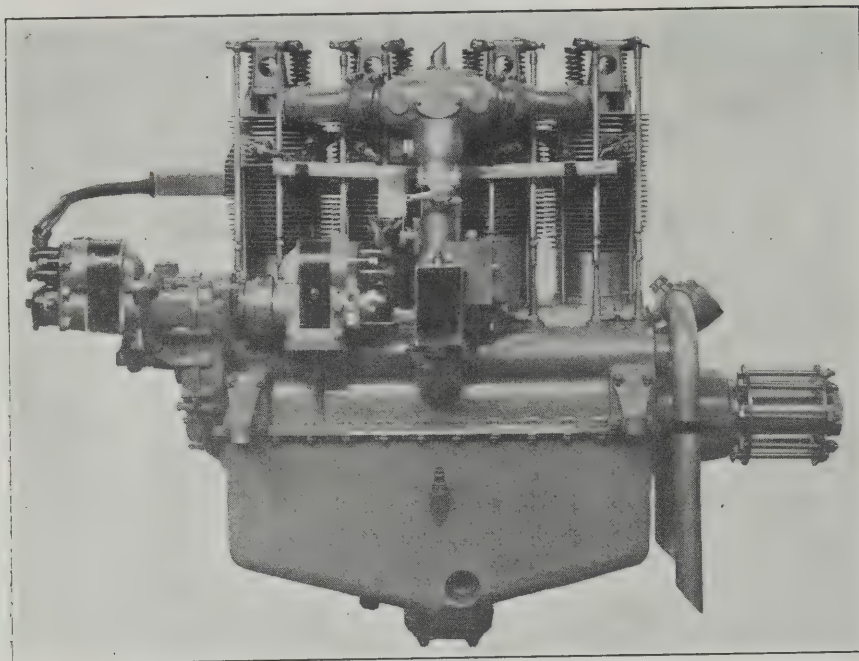
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE A.D.C. CIRRUS MARK II ENGINE.



Inlet side and airscrew end views of the Cirrus Mark II engine.

The Cirrus Engine Mark II, which has recently successfully passed the Air Ministry 100-hour type test, is the result of something like 1,000,000 miles of flying carried out on aircraft fitted with the Mark I.

The original engine has proved extremely reliable and satisfactory, but A.D.C. Aircraft Ltd. have come to the conclusion that a two-seater for use from small fields needs at least 80 h.p. to meet the worst of adverse conditions when taking off.

Apart from the desire for greater power the qualities required for an engine for the private owner are reliability, low initial and running costs, and easy starting. As already mentioned, experience has shown the original Cirrus to be extraordinarily reliable. And in the Cirrus Mark II the characteristic features making for reliability in the original engine have been retained.

In the matter of price the difficulty is essentially one of quantities. In quite small numbers the Cirrus Mark I can be sold at £250. The Mark II is to be sold at first at £295, but this price could be very considerably reduced if orders which justified the building of one hundred in one batch were assured.

Experience with the Mark I engine shows that a life of 30,000 miles between complete overhauls, with 10,000 miles between decarbonising and valve grinding is perfectly normal. This latter operation takes a very short time thanks to the detachable cylinder-heads.

The cost of replacements on the 1,000,000 miles already flown has averaged between $\frac{1}{2}$ d. and $\frac{3}{4}$ d. per mile. It is expected that this figure will in the future fall below the first figure.

The matter of starting is of more importance than might be supposed. Very few things are more infuriating than the car engine which refuses to start when one wants to use it, and the aero-engine which habitually behaves in this manner will certainly never become popular.

Thanks to the impulse starter fitted to both Cirrus engines, and the care taken with the induction and carburettor systems, they have proved exceptionally easy to start.

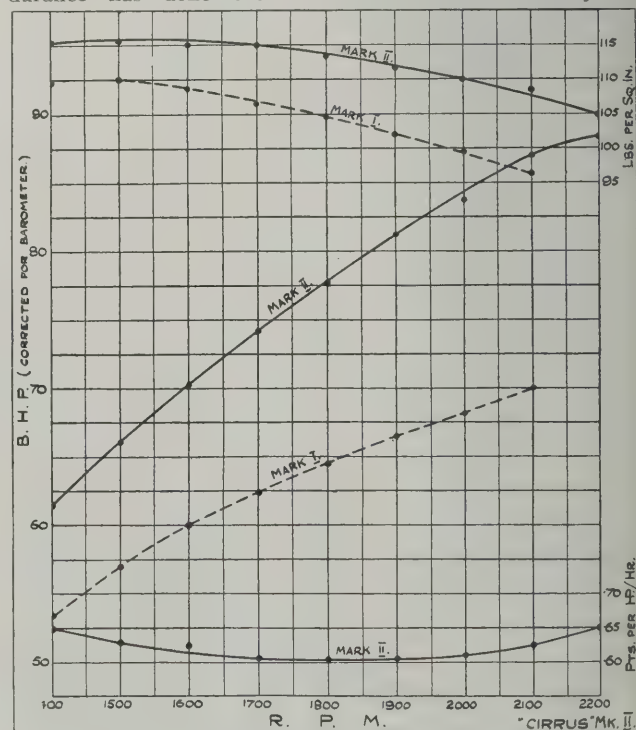
The reliability, ease and cheapness of maintenance and the relatively low initial cost of the Cirrus engines is to be traced to the fact that they have a low compression ratio, a low M.E.P., and ample bearing surfaces. As a result they are relatively heavy engines, and even their starting qualities are in some part achieved at the cost of increased weight, and the extra weight is undoubtedly a disadvantage. It is however one easily exaggerated.

The original Cirrus weighed approximately 270 lbs. An engine of the same power weighing 200 lbs. could undoubtedly be produced at a price. Seventy lbs. is a large proportion of 270 lbs., but the all-up weight of any practical 60 h.p. two-seater is not likely to be less than 1,200-1,300 lbs., and in effect this 70 lbs. should be regarded relatively to this total weight.

It means very nearly that the 60 h.p. two-seater which might have weighed 1,200 lbs. with the lighter engine will weigh 1,270 lbs. with the heavier one, and that instead of carrying 20 lbs. per h.p. it will have to carry 21 lbs. This will undoubtedly reduce the performance slightly, but surely this is worth doing to secure the advantage of cheapness and reliability.

The Mark II Cirrus is not only more powerful, but it is also lighter than the Mark I. It may be said that in this case the extra power has been provided to compensate for the inherent heaviness of the Cirrus type and that a considerably lighter engine of less power would give the same performance and the same load. Undoubtedly it could, but is there any advantage in using less power if that power is in a more expensive form—as it will be if the engine costs more both to buy and to maintain.

The mania for pressing little engines to the limit of endurance has done the British Automobile Industry an



Power curves of the Cirrus Mark II, with those of the Cirrus Mark I dotted for comparison.



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OFFICIAL  REPORT.

Parliamentary Debates
HOUSE OF COMMONS.

Vol. 192, No. 18. THURSDAY, 25th FEBRUARY, 1926

"The SECRETARY of STATE for AIR
(Sir Samuel Hoare):

Last year the Air Force carried out a series of remarkable long-distance flights in the neighbourhood of the British Isles. Here are one or two of them. On 24th September, five Vickers' Virginias, from No. 9 Bombing Squadron, flew from Manston, in Kent, to Leuchars, the most northerly air station in the British Isles, and back to Manston in a day, a distance of 870 miles. A second flight was undertaken by eight Vickers' Virginias from Worthy Down, in Hampshire, again to Leuchars, on 3rd September. Although the weather was very bad three of the machines flew from Hampshire to Edinburgh and back without landing.

Lieut.-Commander BURNEY: With full service load.

Sir S. HOARE: Yes, with full service load, and as an ordinary service exercise, and not in any way as a stunt. They flew a distance of about 800 miles, spending as much as 124 hours continuously in the air

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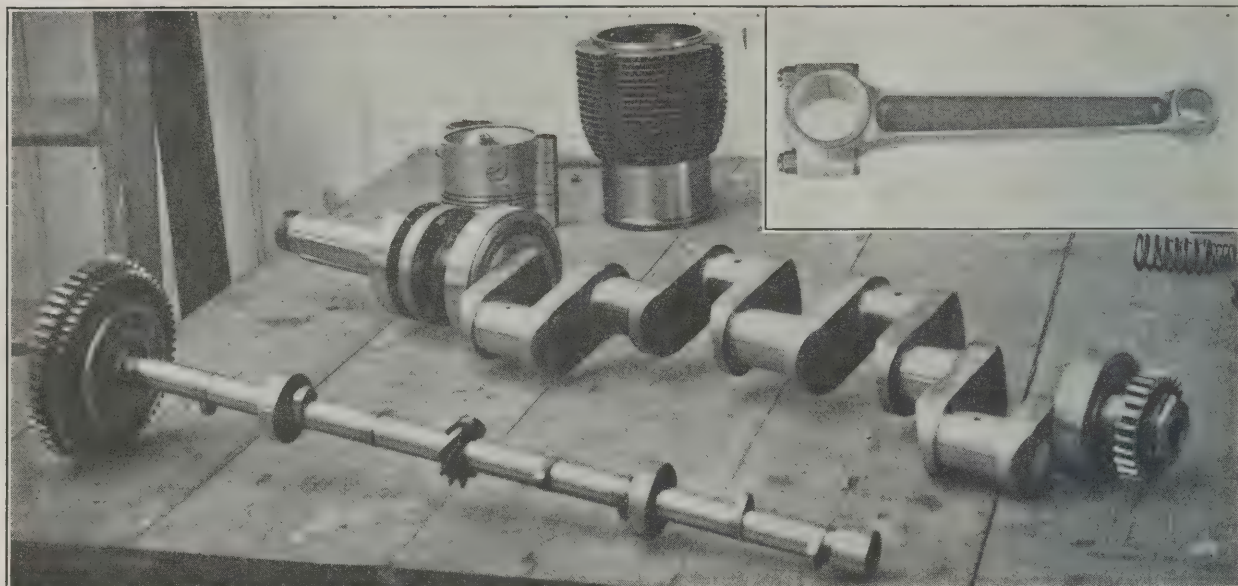
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



CIRRUS MARK II COMPONENTS.—In the foreground the camshaft, with, behind it, the crankshaft. Behind this a cylinder and piston with a connecting rod concealed behind them. Another connecting rod is shown inset. Below this inset is a pair of valve springs.

enormous amount of harm and it certainly does not seem a policy that may safely be followed by the British Aircraft Industry in aircraft intended for private ownership or elementary training.

In general appearance and in the majority of details the Cirrus Mark II very closely resembles the Mark I. It is of the vertical four-cylinder type, air-cooled, and fitted with cast iron cylinders and detachable aluminium alloy heads. Overhead valves operated by push rods and rockers are used.

The crankcase is in two halves, split on the crankshaft centre-line, and the lower half is very deep, both to serve as an oil reservoir and to produce a rigid structure.

Incidentally, except for the diameter of the bore to take the cylinder spigots the Mark I and Mark II crankcases are interchangeable.

Both aluminium and magnesium alloy cases can be supplied. The latter are a little lighter but in some quarters magnesium alloys are mistrusted, hence both are available.

The crankshaft is extremely rigid and is supported in five bearings. The two end bearings are of the ball type, the three intermediate ones of the white-metal-lined bronze-bush type.

The camshaft is carried in the upper half of the crankcase in the port side and is driven by spur gearing from the rear end of the crankshaft. A second spur wheel on the crankshaft alongside the gear which meshes with the crankshaft pinion drives the magneto shaft, and one magneto may be coupled to each end of this shaft to give dual ignition.

Lubrication is by a combination of forced feed and splash—a system which is entirely satisfactory in thousands of engines with at least equally severely loaded bearing surfaces, though it may be inadequate for the majority of the modern high-power light-weight aero-engine types. It has given no trouble in the Cirrus Mark I.

A drowned pump in the sump delivers oil directly to the main crankshaft bearings. Thence it escapes and passes

to the crank-pins, a centrifugal thrower or "banjo" forcing it centrifugally thereto, and the oil thrown out from the big-end is splashed onto the camshaft bearings and cylinder walls, and eventually falls back into the sump.

So far the description applies equally well to both Marks of Cirrus. The main differences between the two are as follows:—

The cylinders of the Mark II are of 5 m/m. greater bore than those of the Mark I.

The cylinder heads of the Mark I have valve rocker brackets cast integral with the heads. In the Mark II a flat base bridging the two valve domes is provided and to this a separate forged duralumin rocker-arm is bolted. This makes a simpler casting and a stronger and lighter construction.

The connecting rods of the Mark II are duralumin forgings, instead of steel as in the Mark I, and duralumin tubes are used as valve push rods.

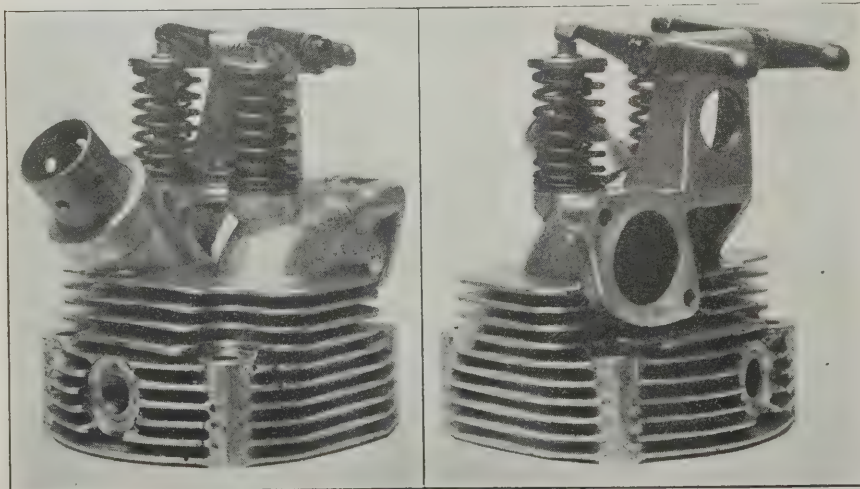
The induction system of the Mark II has two completely separate induction passages—one for the two central and one for the two outer cylinders, and these are fed by a dual Zenith carburettor having a separate choke, etc., for each pair of cylinders. The irregularity of distribution usual in four-cylinder engines with a common induction pipe is thus avoided.

Thus it will be seen that despite a 33% increase in output and a reduction of about 20 lbs. in total weight the new engine embodies practically no untried feature likely to lead to trouble, and it is reported that it runs even more smoothly than the Mark I, which is known to be remarkably sweet running.

Incidentally the Mark II has a sufficiently low compression ratio to run upon straight petrol without added benzol. The 100-hour type test was in fact run upon plain Shell Aviation Spirit.

SPECIFICATION OF THE CIRRUS MARK II.

| | |
|--------------------|-------------------------|
| Bore | 110 m/m. |
| Stroke | 130 m/m. |
| Normal output ... | 78 b.h.p., 1,800 r.p.m. |
| Maximum | 84 b.h.p., 2,000 r.p.m. |
| Weight | 256 lbs. (116 kg.) |
| Petrol consumption | .5 pints (.226 litre) |
| | per h.p./hr. |
| Oil consumption | .018 pints (.008 litre) |
| | per h.p./hr. |



THE CIRRUS MARK II CYLINDER HEAD.

—This differs somewhat from the head of the Mark I type. It has forged duralumin rocker arm brackets bolted to the casting instead of integral brackets and clear air passage between valves.

SIR ALAN COBHAM'S 3 GREAT FLIGHTS

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WITH HIS
FAMOUS
D.H. 50.

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TITANINE USED THROUGHOUT.

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"It may interest you to know that they were the same fabric and the same doping scheme that we used on the Cape flight, and the wings were not re-doped for the Australia flight, which is another proof of the wonderful quality of 'TITANINE' Doping Scheme."

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Tetrafree, Piccy, London
Codes : A.B.C. 5th Edn.
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Oct. 24.

Total flying 57 hrs. 50 mins.

The following members had dual instruction:—Lady Bailey, H. Spooner, S. H. J. Garne, W. I. S. McCleod, J. L. Gardner, C. H. Tutt, V. H. Doree, J. G. Crammond, A. J. Richardson, S. C. Richards, O. J. Hofer, O. J. Marstrand, R. A. St. John, E. A. Lingard, P. W. Hoare, F. C. Elford, H. R. Presland, G. N. Howe, P. G. Lucas, D. P. H. Esler, S. O. Bradshaw, M. P. Susman, H. F. Wright, Miss O'Brian, G. W. Hall, L. Martin.

The following members made solo flights:—P. G. Lucas, E. S. Brough, A. H. M. Lees, A. R. Ogston, W. Hay, Lady Bailey, Miss O'Brian, O. J. Tapper, H. Petre, S. O. Bradshaw, N. J. Hulbert, N. Jones, W. Roche Kelly, Mrs. S. C. Elliott-Lynn, J. J. Barros, E. L. O. Baddeley, H. F. Wright.

Joy-rides were given to the following members:—C. F. Stocks, C. G. Miesegras, J. Plisich, Miss Marks, J. L. Gardner, P. W. Hoare, R. Malcolm, R. Andrews.

On Monday, Oct. 18, Lady Bailey, Miss O'Brian and J. J. Barros all successfully passed the tests for their Aviators' Certificates.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Oct. 24.

Total flying time 24 hrs. 40 mins. Dual with Mr. Parkinson, 19 hrs. 20 mins. Solo 5 hrs. 25 mins. Tests 10 mins.

The following members flew under instruction:—Miss C. R. Leathart, Messrs. J. M. Kennedy, H. Ellis, J. D. Irving, D. Matthews, R. Stawart, M. Bainbridge, T. E. M. Wardill, F. L. Turnbull, R. Miesegras, C. E. Craig, A. D. Bruce, R. Whitfield, and J. N. Charlton.

The following members flew solo:—Mr. H. Ellis, Mr. J. D. Irving, Lord Ossulston with Mr. Heppell and Mr. D. Matthews as passengers, Mr. F. H. Phillips with Mr. Weeks, Dr. H. L. B. Dixon with Miss Howard and Mr. Phillips, Mr. R. N. Thompson with Mr. H. Ellis, Mr. C. Thompson, Junr., with Mr. Osborn, Mr. W. Baxter Ellis with Mr. H. Ellis.

Mr. J. D. Irving went solo on the 21st, putting up an excellent flight and landing.

The Yorkshire Aeroplane Club.

Report for week ending Oct. 20.

Total flying time 14 hrs. 35 mins.

Solo time 3 hrs. 50 mins.

The following flew solo: Messrs. Fielden, Wood, Norway, and Lax. Instruction 10 hrs. 45 mins. The following members took dual instruction with Mr. West: Messrs. Williams, Wormald, Watson, Ambler, L. Dawson, Harvey, Gratwick, Pigg, Mann, Lister, Capt. Beaumont.

On the first three days of this week Mr. West was taking a 'busman's holiday at Brough to do his R.A.F. Reserve training, so that our flying time is rather below the average. However, we have several pupils ready to go solo, and we hope that by the time this report appears Messrs. Mann and Dawson will have been launched.

Early this week G-EELS was at Brough, where Mr. Fielden managed to fly it with one hand and shoot a wild goose with the other. The goose was seen to go spinning down out of control, but a careful search later failed to reveal the body. Under these circumstances it is felt that the goose may be one up on Mr. Fielden.

Mr. Rimmer has been with us on his Avro for the last ten days. After two nights spent in holding the machine down in a field he came to the conclusion that it was time he had some sleep, and so has been flying daily from the aerodrome while carrying out a photographic survey of a part of Leeds for Aeroflms Ltd.

We have it on the highest authority that two members have bought a pig (less engine) in a poke. The breed has not yet been ascertained, but we are told that it is a two-seater suitable for a six-cylinder-in-line engine. We hear that a radial Anzani of pre-war vintage and doubtful power is available for it, and that the trial flights will be carried out by Mr. West. No statement has been received from Mr. West upon this matter.

At any rate, we are assured that it will not be allowed to join the Wren, whose owner continues to regard it thoughtfully. A brief interview with Sq. Ldr. Longton, who described in a few well-chosen words how the machine should be flown to get out of our aerodrome, has not materially assisted the Wren into the air.

The Bluebird is still with us, but by the time these notes appear it will have gone to Croydon to show the Dominion Prime Ministers the sort of aeroplanes we build in Yorkshire. We understand that it is then proceeding to Martlesham for its official trials.—N. S. N.

The Midland Aero Club Ltd.

Report for week ending Oct. 23.

Total flying time 6 hrs. 28 mins.

The following had dual instruction: S. H. Smith, A. B. Gibbons, C. Fellowes, and H. Smith.

The following made solo flights: H. J. Willis, W. Swann, R. L. Jackson, E. J. Brighton, J. Brinton, C. J. Knox.

The Club moved into their new premises during the week as the hangar previously used is now in the occupation of the R.A.F. Bad weather has again restricted flying.

The Hampshire Aeroplane Club.

Report for week ending Oct. 14.

Total flying time 7 hrs. 33 mins. Instruction flying 6 hrs. 5 mins. Passenger flying 48 mins. Solo flying 40 mins.

The following had instruction:—Lt. Graham, R.N., 1 hr. 20 mins., Messrs. Perfect 40 mins., Rumble 30 mins., Stokes 30 mins., Shepherd 25 mins., Courtney 20 mins., Bound 20 mins., Van den Bergh 20 mins., Kerry 15 mins., Westbrook 15 mins., Cooper 15 mins., Heathcote 15 mins., Maloney 15 mins., Miss Home 15 mins., Nicholson 10 mins.

The following members had passenger flights:—Mrs. M. Wood, Mrs. D. Wood, and Mr. Massey.

The following members flew solo:—Mr. O. E. Simmonds, Flg. Off. Clarkson, Messrs. Perfect and Bowen.

No flying was possible on Saturday as a hurricane made itself manifest.

On Tuesday of last week Mr. R. V. Perfect, the hard-working Hon. Secretary of the Club, successfully flew his first solo as recorded above. In view of the terrific amount of secretarial work involved in the

running of the Club it is difficult to imagine when he has found time to learn to fly.

Report for week ending Oct. 21.

Very high winds and rain have curtailed flying during this week, weather conditions being quite impossible on two days out of the seven.

Total flying time 9 hrs. 20 mins. Instruction flying 6 hrs. 25 mins. Solo flying 2 hrs. 30 mins. Passenger flying 25 mins.

The following had instruction:—Messrs. Rumble 1 hr., Bishop 50 mins., Southcliffe 50 mins., Bound 40 mins., Maloney 40 mins., Courtney, W., 20 mins., Stokes 25 mins., Dickson 20 mins., Bailey 15 mins., Kerry 15 mins., Cooper 10 mins., Van den Bergh 10 mins., Perfect 5 mins., and Lieut. Graham, R.N., 25 mins.

Two joy-riders braved the elements, viz., Mrs. Hoare and Lieut. Cdr. Tucker, R.N.

In spite of the weather Mr. Perfect, who flew his first solo last week, took the air nearly every day and put up a really good show.

Mr. D. Rumble successfully flew his first solo on Tuesday, within a few weeks of taking his first joy-ride. Other soloists were Messrs. S. Fry, K. P. L. Bowen, Flg. Off. Brodie and last but not least Mr. F. T. Courtney, the well-known test pilot, with Señor De la Cierva, of Auto-giro fame, as passenger. Mr. Courtney demonstrated that his almost vertical descents on the Auto-giro have not impaired his skill in effecting the more usual type of landing.

The Private Owners' Club.

The British Private Aircraft Owners' Club and their friends were the guests of Rear-Admiral Preston, Mrs. Preston and Mr. Preston, Coldstream Guards, at Westbourne Court, near Emsworth, on Sunday, Oct. 24. Amongst those who arrived by air were:—Mr. Perfect and Mr. Thistlewhite (Moth); Mr. David Kittel, Hon. Secretary, Private Owners' Club (Moth); Mr. Dudley Watt and Mr. Adams (Sopwith Grasshopper); Mr. Miles and Miss Birkett (Avro); Mr. Pashley and Mr. Parker (Avro). Mr. Richardson and Mr. Warwick (Avro) were unable to arrive through engine trouble.

As the lunch was got up at a few days' notice and difficulty was found in finding a landing ground it can be considered a great success, no damage being done to anything. Perhaps this suggestion of inviting the Club to lunch will be followed by others, though they need not necessarily have anything to do with aviation.

The Suffolk Aeroplane Club.

The East Anglian Daily Times of Oct. 23 contains the following encouraging report of the formation of the Suffolk Club:—

A large number of interested people were present at the inaugural meeting of the Suffolk Aeroplane Club, which was held at the Great White Horse Hotel, Ipswich, on Thursday evening. The Chairman read a letter from Sir John Gansoni, M.P., regretting his inability to be present at what he considered would be an historical meeting. Several telegrams were also read, wishing the Club every success.

A Committee was formed, and Mr. Courtney Prentice was appointed honorary secretary. The question of finance was discussed, and it is anticipated that sufficient capital will be raised by members' subscriptions and the support of county people who realise the importance of aeroplane clubs from a national point of view.

The question of a Government subsidy was also raised, and Mr. Prentice pointed out that the Air Ministry scheme was limited to six clubs only, and at the present moment he did not think the Treasury would sanction further expenditure. He called attention to the fact that there are in existence over a dozen clubs, six of which have secured the subsidy. Mr. Prentice remarked that Government assistance might be forthcoming at a later date, and if the Suffolk Club was already established it would probably be given preference.

It was unanimously decided to run the Club on similar lines to the one in Hampshire, the subscriptions of which are:—Pilot members £3 3s., observer members £2, and associate members 10s. 6d. with an entrance fee of £3 3s., £2 2s., and 10s. 6d. respectively.

At the termination of the meeting, a number of enthusiastic people joined up as pilots and associates, and, judging by the large membership, the Club shows signs of becoming a great success.

The Sydney (N.S.W.) Flying Club.

Week ending Sept. 11.

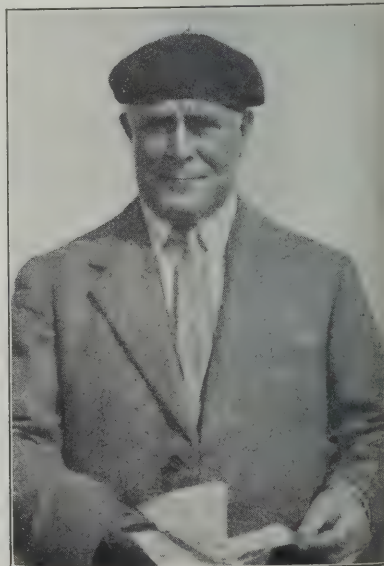
Total flying time 26 hrs. 25 mins., of which 14 hrs. 25 mins. was dual instruction. Total flights numbered 78. Number of pupils under instruction 14.

On Thursday, Sept. 16, three pupils made successful first solos. Mr. J. T. Reid did so after only 5 hrs. 20 mins.' dual, Mr. M. C. Kent after 7½ hrs.' dual, and Mr. M. Rosenfeld after 7 hrs. 15 mins.' dual. On Friday, Sept. 17, Mr. N. F. Stewart soloed after only 6 hrs. 15 mins.' instruction, and on Saturday, Sept. 18, Mr. L. G. Carrick went solo after 6 hrs. 5 mins.' dual.

Mr. Leggatt, the instructor, is to be congratulated on these successes and the fact that eight of his pupils have reached the solo flying stage within seven weeks of the opening of the Club.

The Club Fund reached a total of £928 6s.

THE SECRETARY IN CHIEF.—Mr. Harold Perrin, Secretary of the Royal Aero Club, to which all other Flying Clubs are affiliated,





The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
5. The petrol is carried in a 12-gallon streamline tank above the top wing, which gives a cruising flight of three hours. The oil is carried in a streamline tank on the port side of the fuselage.

FASTEST MACHINE in the GROSVENOR CUP RACE, 1926. Average Speed, 105.5 M.P.H.

WESTLAND AIRCRAFT WORKS,
(Branch of Petters Limited)
YEovil.

Specification.

Leading Weights and Dimensions:

| | | |
|-------------------------------------|-----|----------------------|
| Weight, fully loaded | ... | 1,150 lbs. |
| Weight, light, without fuel and oil | ... | 640 lbs. |
| Fuel capacity | ... | 12 gallons. |
| Useful load apart from fuel and oil | ... | 380 lbs. |
| Surface | ... | 145 sq. ft. |
| Span | ... | 30 ft. 8 ins. |
| Width, folded | ... | 9 ft. 9 in. |
| Length | ... | 20 ft. 5 in. |
| Petrol consumption | ... | 20 Miles per gallon. |

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COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 10; Tuesday, 11; Wednesday, 12; Thursday, 13; Friday, 13; Saturday, 13; Sunday, 2.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 28, passengers 156, freight 13 tons.

AIR UNION:

Paris—London: Machines 21, passengers 18, freight 13 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 12, passengers 22, freight 2½ tons.

SABENA:

Machines 6, passengers 9

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 12, passengers 12

PRIVATE:

Machines 1, passengers 1.

Total number of trips by British Machines, 29, carrying 157 passengers. Foreign Machines, 45, carrying 52 passengers

Comparative Figures:

Week ending Oct. 24:

Machines, 74; Passengers, 209; Crews, 95; Total personnel, 304.

Corresponding week, 1925:

Machines, 56; Passengers, 191; Crews, 65; Total personnel, 256.

Corresponding week, 1924:

Machines, 73; Passengers, 307; Crews, 90; Total personnel, 397.

Corresponding week, 1923:

Machines, 49; Passengers, 116; Crews, 73; Total personnel, 189.

Corresponding week, 1922:

Machines, 82; Passengers, 355; Crews, 139; Total personnel, 494.

Corresponding week, 1921:

Machines, 57; Passengers, 134; Crews, 77; Total personnel, 211.

Corresponding week, 1920:

Machines, 111; Passengers, 192; Crews, 140; Total personnel, 332.

Croydon Notes.

The chief events of the week were the drowning of the Pomeranian dog in the Channel on Thursday and the freezing of the Dominion Premiers and their sisters and their cousins and their aunts and everyone else at Croydon, on Saturday.

Major Richard, who is now in charge of the aerodrome, carried on the Greer and Baker traditions so that the whole of the proceedings ran, so far as the aerodrome management was concerned, with the minimum of fuss and the maximum of efficiency.

The only really bright spots about the entertainment were the braziers thoughtfully placed in two of the hangars round which there were to be seen clusters of the Frozen People.

At one time it looked as though we were going to have a pleasant warm glow over the proceedings when Mr. Alan Butler's D.H.37 and a Service Fairey both caught fire when starting up as the result of generous doping. Some officious persons, however, went and extinguished them, which left us all cold.

Mrs. Elliott-Lynn got her own back on the jealous men. After pulling out her Moth, unfolding it, and flying it, unaided, she flatly refused to do the same thing with the Argosy. This was very unsportsmanlike and one recommends to her to go into training for "Hurling the Hercules" before the next Olympic Games.

Incidentally it was amusing to read in all the evening papers of the interest aroused by the De Havilland Hercules. Most of us knew several days before that the Hercules would not be there, but the knowledgeable "Air Correspondents" evidently mistook the Hampstead (which has now been Jupiterised) for the Hercules.

Was it the arrival of the magnificently equipped German three-engined Junkers that caused the guests to be hustled suddenly off to tea, and was it for this reason that 20 of the guests who were waiting in the Argosy for a promised flight were so rudely turned out and sent off to feed?

One really does not think that the Air Ministry need have been so self-conscious, as in the Argosy we certainly have the finest commercial machine on service in the World, and visitors were undoubtedly most impressed by its size and performance.

One washes one's hands altogether of Uncle Dick of *The Daily Mirror*. In reply to one's last week's criticism, in which one said the pilot and machine were not airworthy and that Pip, Squeak and Wilfred should await a British machine, Uncle Dick merely remarks that "You can't please everybody." The man is not only careless but callous.—G. D.

IN THE DITCH.

(or "The Dog it was that died.")

On Thursday afternoon a Handley Page W.10 (two Napiers), piloted by Mr. Dismore, with 10 passengers, a mechanic and a Pomeranian dog, descended in mid-Channel owing to the stoppage of one engine. All the crew with the exception of the unfortunate Pomeranian dog were rescued by a trawler. This trawler which had been fishing some distance away arrived after the machine had been in the water for 30 minutes. The official rescue scheme which Mr. Drew proved to be useless a few weeks ago, once again failed completely. The passengers and crew were saved by good luck and distinctly not by judgment—other than Mr. Dismore's in putting the machine safely into the ditch without turning it over.

It was known to THE AEROPLANE that the Handley Page W.8, 8b and 10 are unable to maintain their height with full load on only one engine, and that is why this paper failed to enthuse over the new W.10s when they were taken over by Imperial Airways on Mar. 30. Even when most of the petrol has been consumed the best they can do is to prolong their glide somewhat. This remark casts no aspersions on the W.10 in particular, for, so far as one can discover, the only two-engined machines in any country which can maintain their height with any considerable load on board when one engine stops are the Supermarine Southampton flying-boats.

The chief reason for two-engined machines is that owing to their excess power their engines are not run at full power and so last longer, and that if one stops they have a longer glide than a machine without power and so have a better chance of reaching safety. On several occasions the old Handley Page O/400s have reached the shore safely when one engine has stopped well out at sea.

Nevertheless, even with three or more engines, there is always a chance that an accident to one engine—or in fact an accident not connected with the engines—may compel an immediate descent. And so evidently provision must be made for flotation apparatus on all big passenger-carrying machines. Individual life-buoys are not enough.

The proper equipment is a raft big enough to carry passengers and crew in the roughest sea. And there should be no difficulty in carrying such a raft on the top of the fuselage. In fact, with a little ingenuity, the petrol tanks might themselves be the raft, when they are built on top of the centre section, from which they could easily be detached and thrown into the sea.

THE AIR LINE TO INDIA.

A lecture on the organisation of the new air route to India was delivered before the Central Asian Society on Oct. 21 by Lieut.-Col. H. Burchall, of Imperial Airways.

The lecturer said that the aeroplane was at present limited to daylight flying, but even so it saved half the time occupied by a ship. In Europe Imperial Airways maintained 93 per cent. of its services.

Colonel Burchall then went on to describe the various sections of the new route to India, and expressed the hope that the Indian Government would extend the air line across India.

DESERVED PROMOTION.

His many friends in the Aircraft Industry will be glad to hear that Mr. F. S. Spriggs, who, after having been Secretary of the H. G. Hawker Engineering Co. Ltd. for a considerable time, was appointed a Director in May, 1925, has now been appointed General Manager to the firm.

Both the firm and Mr. Spriggs are to be congratulated on the new arrangement. Those who have come in contact with him recognised long ago his outstanding commercial ability, and there is no doubt that with his increased responsibility as General Manager his ability will find much greater scope than it did as Secretary.

The post of Secretary has now been filled by Mr. H. Chandler, who has been promoted to that post, for it has always been the policy of Messrs. Sopwith and Sigrist to fill vacancies in the good jobs with men who have served the firm well in the past and whose abilities are known to them, rather than to try experiments by importing new blood.

One wishes well to Mr. Spriggs and Mr. Chandler in their new posts, and one feels sure that their work will further enhance the standing of the old firm, which most of us still speak of conversationally as the Sopwith people.

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AS AN EXAMPLE OF WIDE RANGE OF DESIGN. CONTRAST THE ABOVE TWIN ENGINED MACHINE WITH THE SUPERMARINE NAPIER S4 MONOPLANE DESIGNED AND CONSTRUCTED FOR THE SCHNEIDER CUP RACE, 19.5.

SUPERMARINE

ENGLAND.

PERSONAL NOTICES.

DEATHS.

BINGHAM-HALL.—On Oct. 18, at Moascar, Ismailia, Egypt, as the result of a flying accident, Vincent Bingham Bingham-Hall, M.C., Captain, The Gloucester Regt (T.A.) and Flg. Off., No. 208 (Army Co-operation) Sqdn., R.A.F.

Capt. Bingham-Hall served in the Infantry with distinction during the War, 1914-18, and was awarded the Military Cross. He was detached from the 6th Batt. (T.F.) Gloucester Regt., on Mar. 15, 1924, for duty with the R.A.F. After a course of flying instruction at No. 5 P.T.S., Sealand, he was posted to No. 4 (Army Co-operation) Sqdn. in August, 1925. He was promoted to the rank of Flg. Off., R.A.F., in October, 1925. Capt. Bingham-Hall was posted to No. 208 Sqdn. last September.

LAY.—On Oct. 21, off Malta, as the result of a flying accident, Hugh Nelson Lay, Lieut., R.N., and Flg. Off., R.A.F., youngest son of the late Amoy Lay, Imperial Chinese Customs, and Mrs. Lay, 82, Margaret Street, W.1.

Mr. Lay was detached from the Navy for duty with the Fleet Air Arm on June 16, 1924. He entered Osborne College in 1916 and was appointed midshipman in 1919. He was promoted to the rank of Lieut., R.N., in October, 1924.

MARRIAGES.

BROWN-ALDRICH.—On Oct. 7, at St. Mary's Church, Nettleton, by the Rev. W. Hutchinson, Kenneth Charles Brown (Engineer to the Newcastle Aero Club), youngest son of Mr. and Mrs. C. T. Brown, Springfield, Nettleton, to Selina Aldrich, daughter of the late Mr. and Mrs. H. Aldrich, London.

MILLS-SMITH.—On Oct. 22, at St. Paul's, Swanley, George Holroyd Mills, R.A.F., third son of Mr. and Mrs. W. B. S. Mills, to Mary Austen, only daughter of Mr. S. Austen Smith, The Old Place, Swanley.

WARD-TILLING.—On Oct. 21, at St. Peter's Church, Hackney, by special licence, Sgt. Arthur Henry Ward, A.F.M., R.A.F., and Miss Bertha Tilling, of Englefield Road, Dalston.

WIGGLESWORTH-BEMROSE.—On Oct. 23, at Holy Trinity, Brompton Road, Flt. Lt. C. G. Wigglesworth, A.F.C., R.A.F., second son of George Wigglesworth, of Brighton, to Margaret Cade, younger daughter of the late Arthur Cade and Mrs. Bemrose, of 26, Oakwood Court, Kensington.

BIRTHS.

DAWE.—On Oct. 19, at 67, Victoria Road S., Southsea, to Sylvia (née Douglas), wife of Flg. Off. H. Stuart Dawe, R.A.F.—a daughter.

GOODFELLOW.—On Oct. 20, at Sharston Manor, near Northenden, to Christine Mary, wife of Alan Goodfellow—a daughter.

O'NEILL.—At Hilltop, Leadenham, Lincolnshire, on Oct. 13, to Flt. Lt. and Mrs. O'Neill (née Dorothy Laing)—a son.

STROUD.—On Oct. 19, at Tring, Herts., to the wife of Flg. Off. G. J. Stroud, M.B.E., R.A.F.—a son.

TIGHE.—On Oct. 22, at Odilham, Hants, to Mona, wife of Charles H. Tighe, Flg. Off., R.A.F.—a daughter.

Why it is called "Well-Balanced."

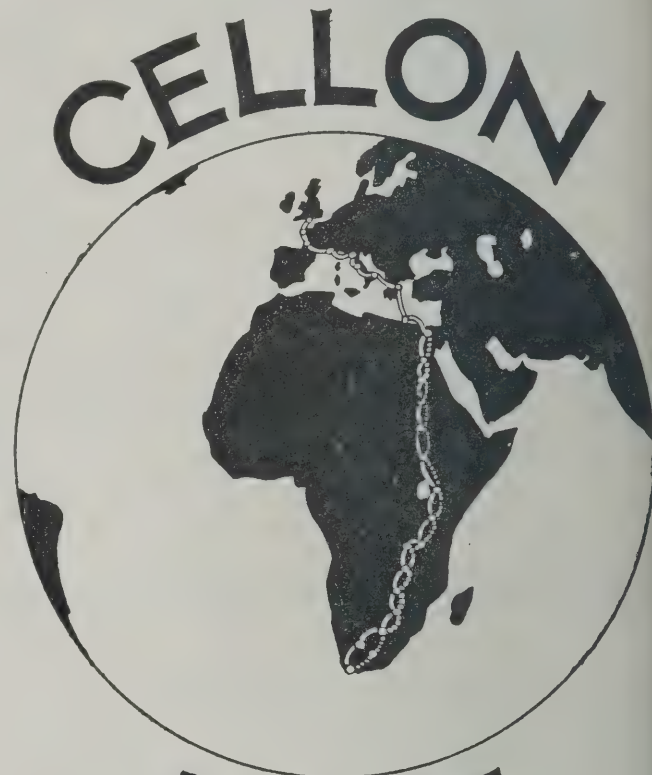
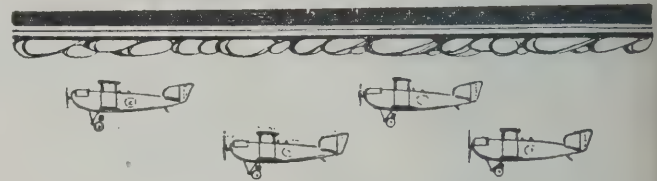
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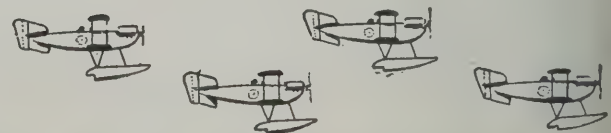
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THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. C. Glegg

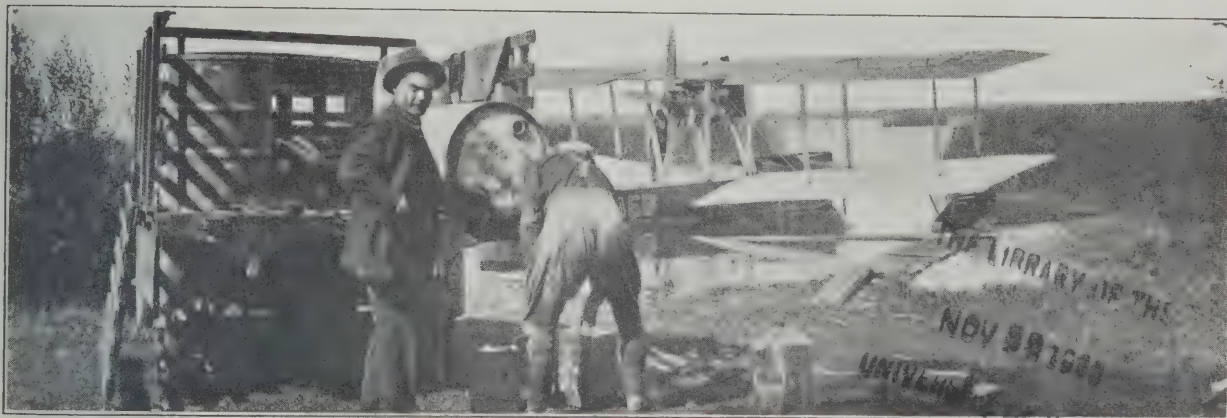
Vol. XXXI. No. 18.

SIXPENCE WEEKLY.

[Registered at the G.P.O. as a Newspaper.]

"WESTWARD THE COURSE OF EMPIRE TAKES ITS WAY."

(GEORGE BERKELEY, BISHOP OF CLOYNE, 1685-1753 A.D.)



AIR TRANSPORT IN ALBERTA:—A Vickers Viking (Napier Lion Engine) belonging to the Northern Syndicate Ltd., taking in gas (or petrol) at Edmonton, Alberta, on the way to High River.

ALL WEATHER FLYING

In low visibility the Marconi Direction Finder—installed on aircraft or at Ground Stations—is a valuable aid to navigation and makes for safety of flight.

Sir Samuel Hoare, the Air Minister, in an address at the Royal Aero Club said wireless was now of tremendous help to pilots working in weather which a few years ago would have been regarded as impossible for flying.

Marconi's Wireless Telegraph Co., Ltd., Marconi House, Strand, W.C.2.

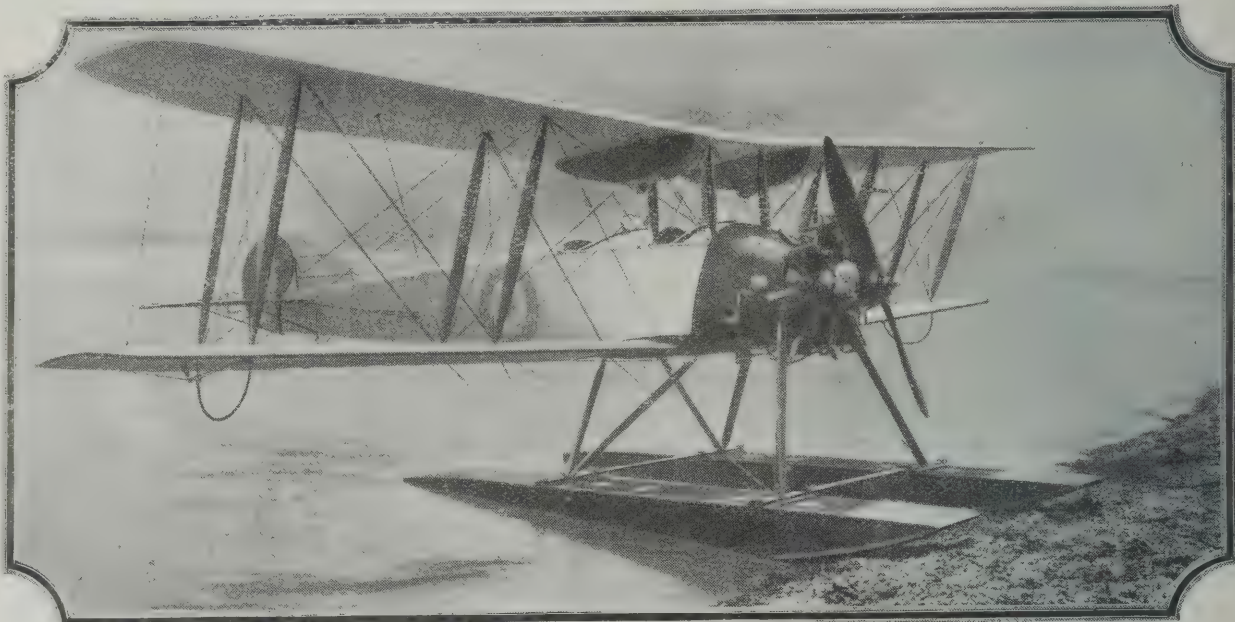
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ON AVIATION AND THE EMPIRE.

In these days aviation is much in the air,—where of course it ought to be. Almost everybody takes an intelligent interest in flying and the ordinary person who is not directly concerned with aircraft knows rather more about an aeroplane than the person who was not concerned with automobiles knew about motor-cars in, say, 1903, when the classic Gordon-Bennett Race was held in the British Isles, to wit in Ireland, for the first and only time.

Probably the general use of motor-cars has had a great deal to do with this general interest in flying, for the step from the car to the aeroplane is nothing like as great as was the step from the horse-drawn vehicle to the motor-driven car. And, thanks largely to wartime experience, the aeroplane of to-day is much less liable to break down than was the motor-car of 1903.

Also this interest in aircraft is far more widespread than was the interest in motoring, for twenty-three years ago few people in the British Dominions Overseas had ever seen a motor-car, and there were hardly any in general use in the Dominions, at any rate outside the big cities which had paved streets. But to-day aeroplanes are actually used in the Overseas Dominions to a greater extent, proportionately to the population than they are in England. That is to say, the mileage covered by civil aircraft, in Canada and Australia for certain, is far greater in proportion to the population than is the mileage in the British Isles—excluding, naturally, the flying which is done by the Royal Air Force.

This Service flying cannot be taken into calculation because the Air Force is an Imperial Defence Force and not exclusively British. But those extraordinary 100 per cent. efficient air lines in Australia cover far more mileage with Australian passengers in proportion to the five million population of Australia than our British Civil aircraft cover with British passengers in or from Great Britain. And though, for some curious reason, there are no air lines in Canada, the mileage covered by the civil branch of the Royal Canadian Air Force in forest patrols and survey work, together with the mileage covered by civil aviation firms on aerial photography and air surveys, is far in excess, in proportion to Canada's eight million population, of similar mileage flown in Great Britain.

AN AIRMINDED EMPIRE.

Also the actual proportion of young and youngish men in Australia and in Canada who were trained to fly during the War 1914-18 is much higher in proportion to their populations than it is in Great Britain. Even in India and in the British Crown Colonies the probability is that the percentage of men among the white population who have flown at one time or another, is higher than it is in the British Isles.

Consequently the Dominions and Colonies overseas are already much more interested in flying than is the stay-at-home population in this country. And therefore we may reasonably look forward to a development of aviation overseas much more rapid than that at home,—always, be it remembered, in proportion to the population.

So far as the young men in the Overseas Dominions and Colonies are concerned they would willingly vote vast sums of Government money for the development of air lines all over their respective territories, but they are held back, perhaps ultimately for their own good by the old men, or the stolid unprogressive business men, who control the finances. Also they are hindered by the fact that, as already stated, the collective mentality of an elected body is always inversely proportional to the number of its members.

Possibly this is all to the good, because flying, as ultimately developed, will be all the healthier and stronger on account of the obstacles which are put in its way while it is young. In any new movement the overcoming of obstacles promotes the strength of the movement, because it plays the same part as does healthy exercise in the development of the human being.

INTER-DOMINION POLITICS.

That being so, there is a good deal of satisfaction to be derived from the important part which Aviation is playing in the proceedings of the Imperial Conference which are now in progress. But one does not care to express an opinion as to whether that Conference is just hot air, like the various air conferences which have been held at the Guildhall in the past.

After all, the Conferees are the Prime Ministers of the various Dominions, and though some may be Statesmen, all are Politicians. As such each one only represents in actual fact a minority of the people in his particular Dominion, for



AIR SURVEY IN CANADA.—A Vickers Viking (Napier Lion), belonging to the Northern Syndicate Ltd., in the wilds of Alberta. In the foreground is seen M. Vachon, the mechanic, coming ashore in a Ford collapsible canoe to lay a cache of "gas and grub."

the party in power almost always gets there because of some third party splitting the votes of its most powerful political opponent. For example, though Mr. Baldwin has an actual majority in the House of Commons, the number of votes actually recorded all together by Liberals, Labourites, Socialists, Independents and fancy politicians would in fact outnumber those cast for the Conservatives.

Therefore if Mr. Bruce goes back to Australia, or Mr. Mackenzie King goes back to Canada full of enthusiasm for Aviation, with a capital A, and proposes either to subsidise new Imperial Air Lines or to build up a vastly increased Australian or Canadian Air Force, respectively, Aviation will find itself faced in those Dominions by a fierce opposition on purely political grounds. Its opponents will have no objection to subsidising aviation as such but they will strongly object to aviation in their particular Dominion being subsidised for the glorification of Mr. Bruce or Mr. King, and his political party.

PUBLICITY.

Nevertheless, the amount of attention given by the Imperial Conference to aviation has secured several columns about aviation in the Press, and, in the view of most people, any publicity is better than none. In fact the speech of Sir Samuel Hoare at the Meeting of the Conference which was devoted entirely to aviation on Oct. 28, plus the replies of the various Dominions Ministers which appeared on Oct. 29, plus the space devoted to the Air Demonstration at Croydon on Oct. 23, amounts to quite a goodly fraction of the space devoted to the arrival of Mr. Alan Cobham at Westminster on Oct. 8. And all that space covered with more or less sensible remarks about flying must have some cumulative effect in making the people of this country air-minded.

Sir Samuel Hoare's speech was as usual full of sound common sense and is bound to have quite a considerable amount of influence not only on the Dominions Prime Ministers but on all the more serious-minded people who have read the long reports in *The Times* and *The Morning Post* and the shorter references for which the less weighty papers were able to spare some space among their reports of murders, divorces, and American ways with Royalty.

The speech itself is far too long to report here, but it is well worth while to record the chief points in Sir Samuel's arguments, because they will be useful to any reader of this paper who becomes involved in discussions on the benefits or otherwise of air transport.

THE AIR MINISTER'S ARGUMENTS.

Sir Samuel Hoare's points are as follows, and one's own comments appear in brackets:—

The civil and military aspects of air communication are inextricably connected and the development of Imperial air lines, whether by aeroplane or airship, is vital to Empire defence. [In other words, Imperial air lines correspond in these days to strategic railways or the command of the sea routes in the past.]

The Empire is in urgent need of better communication. If the

communication is to be improved a sustained united effort is needed. The Prime Ministers of Australia and New Zealand still spend sixty days each on the journey to the Imperial Conference. [Heaven helps Dominions which help themselves. The British Isles pay for practically all the naval defence for all the Dominions, but the Dominions can do something for their air communication without unbearable expense.]

Since the last Conference the air routes of the World have doubled their mileage, and machines had become more powerful, more dependable and more comfortable. [But they might well be more efficient.]

Five million miles have been flown by British services with four fatal accidents and a million miles in Australia for a single accident. [Five million miles for a population of fifty millions and one million miles for a population of five millions looks rather favourable for Australia. In proportion we ought to have flown 10,000,000 miles.]

In 1845 a newspaper said "The largest item in railway returns bids fair to be the list of the killed," and in 1852 a paper said "Railway accidents are the staple of our newspaper reading." [That is worth remembering. About 1890 the same thing was said about bicycles. And motor-cars are not free from such criticism even now.]

The premiums on freight insurance by air are less than half those charged for surface transport. [The reason for this is that there is less danger of loss by theft, which more than balances up the added risk of loss by accident. Passenger insurance is not so cheap in comparison. But it is well to note that the insurance rate on the D.H.50 flown to Australia and back by Mr. Cobham was less than that on a sailing vessel going to Australia fifty years ago.]

There is no technical reason why Canada should not be reached in two and a-half days, India in five days, Cape Town in six days, Australia in eleven days and New Zealand in thirteen days. [The only hindrance is the cost. And as time is money that will be overcome in due course.]

A STATEMENT OF STRATEGY.

The Cairo-Baghdad air mail route is the first section of the Empire air route to the Far East. The Government of India might extend the service to Baghdad and Calcutta. Burma might carry it on to Rangoon. Air Force flying-boats, which are to be stationed in the Far East, might join up with Service flights of the Royal Australian Air Force from Australia. [This statement is worthy of note for strategic reasons. It is the first announcement by a responsible personage of our intention to keep a big force of big flying-boats at Singapore. Sir Samuel omitted to say that Major Norman Brearley is already negotiating with the Australian Government for a subsidy for an extension of the Western Australian Airways to Port Darwin and thence to Singapore.]


The experimental service of 1,400 miles between Khartoum and Kisumu in Kenya might be linked with Cape Town in the South and Cairo in the North. The R.A.F. would arrange for the Egyptian section as part of their training programme, and the South African Air Force might do the Southern section, at any rate experimentally. [All these proposals are good. Our wonderful railway system in Great Britain was built up by joining disconnected stretches in just this way.]

We nations of the Empire are all too hard up for anyone to undertake the cost of an air route to Singapore or to Cape Town but if the R.A.F. undertake Service flights in conjunction with the civil lines and if the Governments of South Africa and Australia allow their Air Forces to co-operate we shall get valuable military training for Service units and shall make possible the experimental transport of mails and passengers over a large section of the British



AN EMPIRE PRODUCT.—A Canadian Vickers Vedette three-seater flying-boat (200 h.p. Siddeley Lynx engine) at the Ontario Provincial Air Service Station at Longlac. The Vedette was the first type of flying-boat to employ an air-cooled radial engine as a pusher. With a load of three people, full equipment, five hours' fuel and parachutes the Vedette gets off the water in 10 seconds. The Canadian Air Board are using a number of these boats for photographic survey and fire patrol work throughout Canada.

566,200 miles in twelve months!

 **D**URING the TWELVE MONTHS ending 30th Sept., 1926, Napier engines in use by Imperial Airways were flown 566,200 miles—one engine alone covering 44,000 miles.

In this period there has been no accident whereby any passenger or pilot has been injured.

Commercial flying is strenuous day in day out service, where absolute reliability is essential.

The Napier engine may be higher in cost than some engines, but its consistency in keeping to its scheduled journeys and freedom from trouble, whereby the lives of valuable pilots are not unnecessarily endangered, more than counterbalances this extra first cost.

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Empire. The proposal involves no subsidy and nothing more than co-operation between Governments and between military and civil flying. If the experimental flights are successful civil air lines will follow inevitably. [An eminently sensible idea. It costs no more for Service machines to fly up and down a regular air line than it does for the pilots to do practice flying round a set circuit, or to go joy-riding from station to station. And running such air lines regularly is good for moral and discipline.]

There are great opportunities for air communication in the West Indies and internal air lines in Africa, and, with a comparatively short service, the Irish Free State could link Ireland with the great air routes of the Empire and the World.

AIRSHIP POLICY.

Airships will carry out the long distance non-stop journeys of the future. The two airships now being built will each carry one hundred passengers and freight some 4,000 miles without refuelling. They will be more comfortable than aeroplanes for long distance journeys. A model at the Air Ministry shows accommodation for one hundred passengers, promenade decks, outside cabins and smoking and dining rooms.

The aeroplane and the airship are really complementary to each other. The dangers of fire and of breakage in so large and fragile a structure have been carefully examined. The official attitude towards these problems had been described as "healthy cold feet."

Accurate weather reports will avoid danger from storms. Mooring masts, a post-war invention, will avoid the risk of pulling the machines into sheds. Heavy oil engines will be used in the ship which is being built at Cardington, so avoiding the risk of petrol fires.

The Dominions will have to assist with the erection of mooring masts, at about £70,000 apiece, and the provision of meteorological reports, which cost very little. At present we are ahead of any other nation in the development of airships and we have the chance of founding within the Empire an airship industry. [With all of which one agrees, except that one believes that the mooring mast was invented during the War, if not before.]

VIEWS FROM THE DOMINIONS.

MR. MACKENZIE KING, Canada, related what Canada had already done. 56,000,000 acres of forest had been patrolled on fire duties, 227 fires had been spotted, 224 fires suppressed, 8,335 square miles of vertical survey and 30,000 square miles of oblique survey had been done. Canada was ready to co-operate with the British Government in the matter of mooring masts and landing places and meteorological work. [But apart from the Government there seems to be little or no private enterprise in Canada, apart from the Fairchild Co. and the Laurentide Co. and the Northern Syndicate Ltd. Which is queer, considering how many Canadian pilots there were during the War, 1914-18, and considering how closely Canada resembles the United States in its suitability for flying.]

MR. BRUCE, Australia, said that if India and Burma would co-operate Australia would certainly consider the question of experimental flights in co-operation with British squadrons. He himself saved four days coming to the Conference by hiring an aeroplane as a taxi.

Western Australian Airways, covering 1,442 miles, which began with 577 letters in its first month, now carried 25,000 letters a month. The Queensland Airways ran weekly over 800 miles and the Adelaide service ran weekly over 578 miles, besides having connections from Broken Hill to Mildura, 189 miles, and Melbourne to Hay, 233 miles, twice weekly. Over 7,000 miles were being covered each week.

His Government believed that commercial aviation would afford a reserve of personnel and machines for the fighting forces. [That is a long way ahead. At present the fighting services provide a reserve of personnel for civil aviation.]

Australia had 133 Government landing grounds and there were eleven private licensed aerodromes in use. If the service from Britain got to Australia there would be no difficulty about landing grounds. The public in Australia did not think it anything of an adventure to do a 1,400 mile flight, which indicated that civil aviation was past the experimental stage. Australia would co-operate with mooring masts and weather reports for airships. [Provided, of course, that political opposition from the Socialists is not too great.]

MR. COATES, New Zealand, said that air development there was very small. The people had not the flying sense because they had not

had the opportunity of obtaining it [They had enough machines and engines presented to them by the British Government after 1918 to have run air-mail lines all over New Zealand if the Government had had the common sense to pay for petrol and repairs.]

He would like to know more about airships before saying whether New Zealand would be committed to erecting a mast, but they were willing to join in any practicable scheme if they could be made certain about it. [New Zealand is inhabited very largely by Scotsmen.]

MR. HAVENGA, South Africa, said that his country had so far considered civil aviation mainly in relation to creating a reserve for the Air Force. No doubt when the country was developed further and there was public interest there would be opportunities for commercial air transport. He did not think they could make themselves responsible for running any scheme up to Uganda, but they would be prepared to maintain the service inside the Union. Sending a few experimental flights could possibly be arranged. The Government would consider providing a mooring mast. [South Africa is very Dutch.]

MR. MCGILLIGAN, Irish Free State, said that civil aviation had been left to private enterprise, which had not made any advance whatever. [Nor is it likely to do so in a country chiefly inhabited by Mediterranean rebels.]

The Irish hoped that their geographical position on the route from Canada to England would now be specially considered in relation to air communications. [Mr. McGilligan is Minister for Industry and Commerce. The Mediterranean Irish are not noted either for industry or commercial acumen. But they always like to consider any scheme which will extract English money and spend it in Ireland.]

MR. MONROE, Newfoundland, said that he did not see that the Newfoundlanders could justifiably place an order for a mooring mast costing £70,000. If airships could fly to Canada in two and a-half days, Newfoundland's usefulness would seem rather to disappear, but if there was anything they could do in the way of being useful in a minor way they would be very pleased. [Newfoundland is also largely Scottish.]

LORD WINTERTON, Parliamentary Under-Secretary for India, agreed with everything Sir Samuel Hoare had said. He stated that the whole question of civil aviation in India had been recently under review by the Indian Air Board and an important memorandum outlining proposals for future action had been laid before the Government of India.

The views expressed were that the Government of India was now in a position to take an active part in the development of air routes touching India. They urged that the Indian Government should participate as a principal in any contracts made and should take their share in the financial liabilities. They recommended a systematic survey of the probable air routes in India especially Calcutta-Rangoon. A Director of Civil Aviation would shortly be appointed. [As the Indian Empire has a very handsome surplus in its Budget it can very well afford to spend a good deal of money on developing aviation in India, where, for strategic reasons, in view of Russian developments on the North-West, air communication will soon be of prime importance, not only to India but to the Empire.]

MR. AMERY, Secretary of State for the Colonies, said that the Cairo-Karachi route would bring one of the most inaccessible parts of the World into the middle of a highway of traffic, which would have obvious effects on its developments. The linking up of East Africa with South Africa and Egypt was most important. The privately owned aeroplanes such as the Moth would make life much more easy in a country like East Africa. He was also interested in the possibilities of aeroplanes for spraying cotton fields. Aircraft had also done excellent work in archaeological discovery.

Airship lines had great possibilities. There were one hundred times as many men who can spare a month to visit Australia or New Zealand as there are men who can spare five or six months. Any quick interchange of letters would improve matters for emigrants as it would make an immense difference in their whole outlook towards the problem of leaving this country to settle in some other part of the Empire. [This is a psychological point which is well worth considering.]

Now all of that is very satisfactory so far as it goes. All



THE AIR SURVEY CO.'S OPERATORS.—The four white men, in topees, left to right, are Mr. Bishop (engineer), Mr. Parker (rigger), Mr. Andrews (photographer), and Mr. Raynham (pilot and manager). The gentleman on the left in the external dress shirt is a Bengalee photographic developer and printer. The rest are assorted Bornean, Malay, and more-or-less Chinese workmen. The photograph was taken at Sibui in Sarawak.

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these pious wishes are very encouraging. But do they get anywhere?

One has already referred to the fact that anything which the Dominions Prime Ministers propose when they get back home will be opposed tooth and nail by their political opponents, for political feeling runs higher Overseas than it does at home. Moreover the political opponents of these Ministers have not come under the persuasive eloquence of Sir Samuel Hoare nor have they had the ocular demonstration of Air Power which has been shown to their rivals during their trip Home. Consequently there is the possibility of the said opponents failing to think Imperially, or at any rate sacrificing their Imperial thoughts to party politics.

PROVINCIAL PATRIOTISM?

A glaring example of how little some of the Overseas Dominions do back up the Imperial idea of Air Power is provided by the Province of Quebec.

Recently the Quebec Provincial Government imported into Canada one complete French aviation company known as the *Compagnie Aérienne Franco-Canadienne*. This firm is equipped with French pilots and mechanics. It has been given a sizeable contract, amounting to 100,000 dollars, or roughly £20,000, for mapping certain areas in Quebec.

One does not profess to know all the Canadian Air Regulations by heart, so one does not know whether it is actually illegal for a Canadian Provincial Government to give a big contract to foreigners. But this act does strike one as being a deliberate affront to the various Canadian civil aviation companies, which have for several years been doing excellent work without very much encouragement from the Canadian Government as such, though one feels sure that the Canadian Air Board has done as much for the companies as lies within its limited powers.

One knows that there is no love lost between the French-Canadian *habitant* and the English Canadian, and so one can understand the French influence in Quebec being used in favour of a French firm, if only to get level with the English Canadians for the contempt with which they regard

the French. But one would have thought that in its own financial interests the Quebec Provincial Government would have had a little more common sense even though it may lack provincial patriotism. And so it is that we have foreigners mapping the coasts of one of our Dominions.

Also the films when taken are being shipped to France to be made into maps. Which deprives British subjects of a job which could be done as well or better in Canada.

Thus we have in this act of the Government of Quebec, both the money of the Canadian taxpayer going out of the country to France, and Service pilots of a foreign Power having access to strategic points on our Imperial coast-line. Just how much the Canadian Air Board or the Canadian Dominions Government could have done to prevent this outrage one does not profess to know, but surely some hindrance might have been placed in the way of the people who worked the Government contract which brought these foreigners into our Dominions.

One is even moved to doubt the good will of the Canadian Government itself when one gets, as one had recently, a sidelight on that excellent flight made across Canada by the American aviator Mr. McKey, and Sq. Ldr. Earl Godfrey of the Royal Canadian Air Force.

The position was sized up by a Canadian aviator who says: "The commercial companies get little enough backing from our numerous Governments, just a kind word now and again thrown in, of course, with a bucket of apple sauce. The bunk handed out about 'path-finding' a route across was just pure falsehood; the truth being that the Douglas was returning to her factory in California, and as she was flying in the East on pontoons they naturally followed a course through Canada, where water was plentiful."

"That part is all right. But letting an Air Force pilot have leave to do the ferry work when commercial pilots are looking for work was a cheap and rotten way of doing business and no aid to commercial companies in Canada."

That certainly is another view of the question.

(To be continued.)

THE CANADIAN AIR PROGRAMME.

The following is the 1926-27 programme of the Royal Canadian Air Force in civil operations for the various Government Departments.

DEPARTMENT OF THE INTERIOR.

Forest Service.

S. W. Alberta.—Fire protection over the Rocky Mountains forest reserve from the International Boundary to the Saskatchewan River.

Manitoba.—Fire protection and suppression in the lake country lying east, north and north-west of Lake Winnipeg, extending over Saskatchewan. Forest sketching, type mapping and aerial photography in this district.

Topographical Surveys Branch.

Vertical photography in connection with the mapping of the Rouyn mineral area, Quebec (in conjunction with the Geological Survey, Department of Mines).

Oblique photography for mapping Trout Lake, Lake St. Joseph, Sioux Lookout, Armstrong and Quetico sheets of the Topographical Map of Canada; portions of the Battleford, Prince Albert and Fort Alexander sheets.

Vertical photography in the vicinity of Vancouver, B.C., Calgary, Alberta, and Oka, Quebec.

Canadian National Parks.

Fire detection patrols in the Waterton Lakes area and occasional patrols in Rocky Mountains Park. Oblique photography over sites of historical interest as other operations permit.

North-West Territories and Yukon Branch.

Vertical photography over the Turner Valley oil fields, Alberta.

Water Power and Reclamation Service.

Oblique photography in connection with the development of power projects in Ontario and Quebec.

Vertical photography in the Lethbridge irrigation district, Alberta.

International Boundary Commission.

Vertical photography over the International Boundary from St. Mary River to Waterton Lakes, Alberta.

OTHER DEPARTMENTS.

Department of Indian Affairs.—Transportation of Treaty-Paying parties in Northern Manitoba.

Department of Mines.—Transportation in the Manitoba area and vertical photography in the Rouyn District (in conjunction with the Topographical Survey).

Department of Customs and Excise.—Transportation of officers of the Preventive Service on the British Columbia Coast.

Department of Marine and Fisheries.—Patrols for the prevention of illegal fishing on the British Columbia coast.

Department of Agriculture.—Flight for the investigation of wheat rust diseases in the Prairie Provinces.

Department of National Defence; Geological Section.—Vertical photography in the Rideau Lakes district.

Department of Public Works.—Oblique photography of Harbour works.

In addition, similar work is being carried out by provincial governments and commercial interests.

The Province of Ontario operates its own flying service. During the season of fire hazard, fire protection and suppression patrols are carried on throughout Northern Ontario. Forest type mapping is also carried out on a large scale, also transportation of survey parties and the exploration of the district of Patricia. The payment of Treaty Money in the Albany River and James Bay districts, is also conducted under contract for the Dominion Government by the Ontario Provincial Air Service.

In Quebec the work is undertaken by commercial companies, under contract, for the Provincial Government.

SOWING BY AIRCRAFT.

Aeroplanes of the R.C.A.F. are being employed by the Manitoba Department of Agriculture to sow wild rice in the marshes of Northern Manitoba in order to extend the feeding grounds of the wild duck and musk rat.

The musk rat makes up a considerable portion of Manitoba's annual fur output. As the country is trackless and inaccessible, aeroplanes provide the only means of disseminating the wild rice seed.

THE R.A.A.F. PACIFIC FLIGHT.

On Oct. 30, Group Capt. R. Williams, D.S.O., O.B.E., Chief of the Australian Air Staff, Flt. Lt. I. McIntyre, A.F.C., and two mechanics of the R.A.A.F., who are making an extended flight through the South Sea Islands, on a D.H.50a seaplane, arrived at Keita, Solomon Islands.

On Oct. 31, they left for Gizo, via the Shortland Islands. The D.H.50a is the first aircraft to be seen in these waters.

LIEUT. F. H. CONANT, U.S.N.

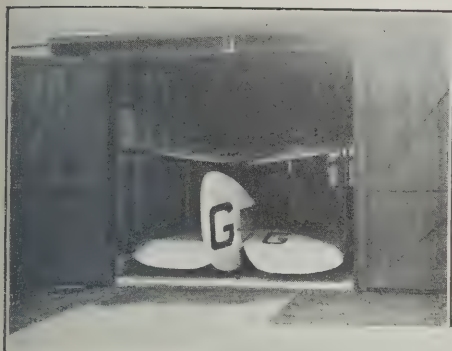
On Oct. 30, Lieut. F. Conant, U.S.N., a member of the U.S. Navy Schneider Trophy Team, was killed while practising over Winter Harbour, 30 miles north of Norfolk, Virginia. A seaplane, bearing the number of his practice seaplane, was seen to crash and sink in shallow water. Efforts to raise the seaplane have failed, and so far the body of Lieut. Conant is missing.

In an unofficial trial on Oct. 26, Lieut. Conant was timed to reach a speed of 250 m.p.h., on one of the Curtiss racing seaplanes which is to take part in the contest.

The actual competing machines are reported to be fitted with specially boosted Packard 1-A 1500 engines in place of the Curtiss V-1400 engines used last year.

The REAL OWNER-PILOT'S AEROPLANE

THE DE HAVILLAND "MOTH"



The "MOTH," with its wings folded can be housed in a building no bigger than an average garage—Illustration No. 1 shows a "MOTH" in one of the "lock-ups" at Stag Lane Aerodrome which are let at a rent of £1 per week, including garage services such as washing, handling on the ground, etc.

2.—Spreading the wings for flight and folding them for housing or towing behind a light Car are operations which can be carried out by the MOTH-OWNER in a minute or so. The mechanism is perfectly simple and foolproof.

3.—The petrol tank holds sufficient fuel for journeys up to 250 miles and there is ample room for luggage, golf clubs and other gear—remember, the "MOTH" has been designed as a real utility vehicle.

4.—Both pilot's and passenger's cockpits are well-protected by windscreens—no special clothes are needed; the seats are comfortable—note the door to the passenger's cockpit; long pipes carry the exhaust gases away to the tail and the cockpits are comfortably quiet.

5.—The "MOTH" is easy and pleasant to fly. Its engine is so robust and simple in construction that it can be kept in perfect tune by anyone having an ordinary knowledge of motor cars. Learning to fly on a "MOTH" is an inexpensive matter at any of the Light Aeroplane Clubs or The de Havilland School of Flying.

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THE needs of the man—or woman—who requires an aeroplane as a practical vehicle were carefully considered in the design of the "MOTH"—comfort, space for plenty of luggage, easy and effective controls, an engine which the "man in the street" can keep in perfect order, and, above all, the robustness and reliability that are expected in a good automobile were taken to be of more importance than freakish performance such as is generally encouraged by technical competitions. Here, then, is a two-seater aeroplane which for cross-country travel renders other modes of transport obsolete. The MOTH-OWNER is independent of roads—both as regards condition and congestion—he can make his own time table and can journey without fatigue at a speed of 70-80 miles per hour in any direction.

"MOTHS" are built in the same factory and the same methods are employed in their construction as in the D.H.50 which Sir Alan Cobham has flown over 100,000 miles on Empire flights.

The price of the "MOTH" with the 27-60 h.p. "CIRRUS" engine is £795, or with the 30-75 h.p. "CIRRUS" £830, ready to fly away from Stag Lane Aerodrome.



"Flight"
Photos.



THE ROYAL AIR FORCE.

The London Gazette.

Oct. 26.

GENERAL DUTIES BRANCH.—Pit. Off. H. E. Nowell is promoted to the rank of Flg. Off. with effect from Sept. 9, and with seniority of June 17; Pit. Off. on probation J. F. Dowdeswell is confirmed in rank (Oct. 4).

The following are transferred to the Reserve:—CLASS A: Sq. Ldr.—J. R. Howlett (Oct. 24); Flt. Lts.—E. E. Deans D.S.C., W. E. C. B. C. Forsyth, C. Pilkington, A.F.C., W. G. Preston, D.F.C., E. P. Roberts, M.C., D.F.C., D.C.M. (Oct. 24); H. C. Black (Oct. 27); R. S. P. Boby (Oct. 28). FLG. OFFS.—T. Brewin, W. Halford, D.F.C., P. Harris, D. E. Herbert, D.C.M., F. A. O'Brien, S. H. Potter, R. J. Read (Oct. 24). CLASS B: Flt. Lts.—S. Symonds (Oct. 24); R. E. H. Daniel (Oct. 28). FLG. OFFS.—C. C. Clark, G. W. Mahony-Whitton (Oct. 24). CLASS C: Flt. Lt.—W. S. Watson (Oct. 24).

The following Flg. Offs. relinquish their temp. comms. on return to Army duty:—E. M. Drummond (Lt., Black Watch) (Sept. 6), E. C. Ridlington (Lt., R.A.), D. Stansby (Lt., R.A.) (Oct. 16).

The S.S. comms. of the following Pit. Offs. on probation are terminated on cessation of duty (Oct. 27):—A. E. C. Eccleston, J. W. O. Fuller, C. G. Grenfell.

Flg. Off. H. V. Alder is dismissed the service by sentence of General Court Martial (Oct. 11).

STORES BRANCH.—Pit. Off. on probation G. L. Worthington is confirmed in rank and is promoted to rank of Flg. Off. (Oct. 6); Pit. Off. on probation H. M. S. Dawes is confirmed in rank (Oct. 6).

MEDICAL BRANCH.—H. Penman, M.B., is granted a S.S. comm. as a Flg. Off., for three years on the Active List, with effect from and with seniority of Oct. 8; Flg. Off. N. I. Smith, M.B., ceases to be seconded to the King's Cross Hospital, Dundee (Oct. 8); Flt. Lt. T. M. Walker is transferred to the Reserve, Class D.2 (Oct. 25).

CHAPLAINS' BRANCH.—The Rev. R. E. V. Hanson, O.B.E., M.A., is appointed Chaplain-in-Chief, R.A.F. (Oct. 25); the Rev. G. H. Collier, M.A., is granted the local relative rank of Wing Cdr. whilst employed as Senior Chaplain (Iraq) (Oct. 1); the Rev. W. T. Rees, B.D., relinquishes the local relative rank of Wing Cdr. on ceasing to be employed as Senior Chaplain (Iraq) (Sept. 21); the Rev. H. D. L. Viener, C.B.E., M.A., K.H.C., relinquishes the appointment of Chaplain-in-Chief, R.A.F., and is placed on the retired list (Oct. 25).

RESERVE OF AIR FORCE OFFICERS.—A. B. Roche is granted a comm. in Class B, General Duties Branch, as a Flg. Off., with effect from Aug. 31, and with seniority of Feb. 4; E. K. Rayson is granted a comm. in Class A.A., General Duties Branch, as a Pit. Off. on probation (Sept. 13). Pit. Off. D. S. Purnell is confirmed in rank (Oct. 26); Flg. Off. H. P. L. Gardner is transferred from Class A to Class C (Oct. 23).

The following relinquish their comms. on completion of service:—Flg. Off. K. L. Graham, Flg. Off. C. T. Robinson (May 29); Flg. Off. G. Burton (June 19); Flt. Lt. W. A. Malone (July 13); Flg. Off. H. St. C. Roy, M.C. (July 26); Flg. Off. C. P. Murchie (Aug. 2); Flg. Off. I. R. Taylor (Aug. 14); Sq. Ldr. C. E. C. Rabagliati, M.C., A.F.C., Flg. Off. I. G. Harrison (Sept. 4); Flg. Off. F. J. H. Ayscough (Sept. 12); Flg. Off. F. W. Martyn (Oct. 10); Flt. Lt. A. D. Newbury, Flt. Lt. L. Whitworth, A.F.C., Flg. Off. G. Baillie, Flg. Off. E. A. J. Brown, Flg. Off. K. C. L. Gorringer, Flg. Off. J. D. Jackson, Flg. Off. G. Kidd, Flg. Off. L. J. Lipscomb, Flt. Lt. L. H. Pakenham-Walsh, Flg. Off. A. J. Packham, Flg. Off. A. W. S. Wagner (Oct. 24).

The comm. of Pit. Off. on probation A. B. Roche in Class A.A. is terminated on cessation of duty (Aug. 31).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Pit. Off.:—No. 600 CITY OF LONDON (BOMBING) SQDN.—H. O. Young (Oct. 26).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Sister Miss W. E. Molesworth relinquishes the acting rank of Matron (Oct. 1).

Appointments.

Week ending Nov. 1.

GENERAL DUTIES BRANCH.—Air Vice-Marshal C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C., to H.Q., Inland Area, Stanmore, on appointment as A.O.C., 1/11.

Air Commodore F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., to H.Q., Cranwell, on appointment as A.O.C., 1/11. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., to Air Ministry, on appointment as Director of Personal Services, 1/11.

Wing Commander W. B. Callaway, A.F.C., to R.A.F. Depot, Uxbridge, 10/9.

Squadron Leader W. H. Longton, D.F.C., A.F.C., to No. 1 F.T.S., Netheravon, 18/10.

Flight Lieutenants A. J. Warwick, to No. 32 Sqdn, Kenley, 2/11. C. J. Sims, D.F.C., to School of Photography, Farnborough, 27/10. F. O. Soden, D.F.C., to No. 605 Sqdn., Castle Bromwich, 5/11. H. A. J. Wilson, O.B.E., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 1/11. C. Bonamprey, D.F.C., to R.A.F. Base, Malta, 15/11. N. P. Dixon, A.F.C., to H.Q., Egypt, 8/10. N. H. Jenkins, O.B.E., D.F.C., D.S.M., to No. 15 Sqdn., Martlesham Heath, on transfer to Home Estab., 15/11. S. E. Storrar, to No. 1 F.T.S., Netheravon, on transfer to Home Estab., 7/11. S. E. Toomer, D.F.C., and R. M. Foster, D.F.C., to H.Q., Iraq, 20/10. M. Ballard, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 10/10. N. L. Desoer, to A. and G. School, Eastchurch, 8/11.

Flying Officers E. B. Forster, to Stores Depot, Iraq, 2/10. G. L. Candy, to Inland Water Transport, Iraq, 28/9. F. G. Jennings, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 7/11. L. S. Potter, to H.Q., Iraq, 9/10. F. H. Cashmore, to Home Aircraft Depot, Henlow, 1/11. W. W. Bradford, to H.Q., Coastal Area, 1/11. L. K. Barnes, to School of Naval Co-operation, Lee-on-Solent, 21/9. E. A. Sullock, A.F.C., to No. 5 F.T.S., Sealand, 3/11. E. M. Drummond, to R.A.F. Depot, Uxbridge, on appointment to a Perm. Comm., 20/10.

MEDICAL BRANCH.—Flight Lieutenants F. T. Allen, to R.A.F. Depot, Uxbridge, 6/11. R. W. White, to A.A.E.E., Martlesham Heath, 3/11. F. P. Schofield, to Palestine General Hospital, 1/10. T. V. O'Brien, M.B., to H.Q., Iraq, 1/10.

Flying Officers P. D. Barling M.B., to No. 208 Sqdn., Egypt, 1/11.

M. J. Marren, M.B., to Station H.Q., Upavon, 16/9. H. Penman, M.B., to R.A.F. Depot, Uxbridge, 1/11.

STORES BRANCH.—Flight Lieutenant G. F. Law, to Air Ministry, Directorate of Equipment, 1/11. Flying Officers L. L. Bray, to Station H.Q., Upavon, 15/10. H. Parker, to No. 60 Sqdn., India, 1/11. F. A. R. Smith, to No. 2 Wing H.Q., India, 1/10.

ACCOUNTANT BRANCH.—Flying Officers F. H. Wakeford, to No. 1 School of T.T. (Apprentices), Halton, 5/10. C. E. Aston, to No. 503 Sqdn., Waddington, 7/10. C. Lorimer, to No. 502 Sqdn., Aldergrove, 11/8. Pilot Officers J. Lambie, to No. 4 Sqdn., S. Farnborough, 11/8. R. A. J. Mullarkey, to R.A.F. Base, Calshot, 7/10.

CHAPLAINS' BRANCH.—The Rev. R. E. V. Hanson, O.B.E., M.A., to Air Ministry, on appointment as Chaplain-in-Chief, 26/10.

The Chaplain-in-Chief.

The London Gazette, dated Oct. 26, contains the following announcement:—

The Rev. H. D. L. Viener, C.B.E., M.A., K.H.C., relinquishes the appointment of Chaplain-in-Chief, R.A.F., and is placed on the retired list (Oct. 25).

Mr. Viener held the relative rank of Air Commodore in the R.A.F. and has held the appointment of Chaplain-in-Chief since October, 1918. He was educated at Malvern and Oxford and appointed Chaplain, R.N., in 1901. Mr. Viener was awarded the Messina Medal and Order of the Crown of Italy for services at the earthquake at Messina in 1908. He was lent to the R.A.F. in May, 1918.

The following appointment also appears in The London Gazette of Oct. 26:—

The Rev. R. E. V. Hanson, O.B.E., M.A., is appointed Chaplain-in-Chief, R.A.F. (Oct. 25).

Mr. Hanson joined the R.A.F. in November, 1918, after 18 years in the Royal Army Chaplains' Department, and was appointed to the relative rank of Group Capt. in 1921. He has been stationed at Manston.

The Fleet Air Arm at Portland.

H.M.S. *Furious* took part in the Naval demonstration arranged for the Members of the Dominions Conference on Oct. 30, off Portland. Describing the Fleet exercises, *The Times* of Nov. 1 states:—

Directly the *Revenge* was out of harbour the exercise began, and in a very few moments submarines of the "H" and "R" classes were seen diving to periscope depth and returning to the surface. As the battleship approached the *Furious*, aircraft were launched from this aircraft-carrier for reconnaissance purposes, and these flew over the *Revenge* in perfect formation.

In an article on the exercise a Naval Correspondent of *The Times* states:—

The last episode was one of peculiar interest, for it foreshadowed what may prove one of the greatest of all developments in sea warfare. This was the return of the scouting and spotting aircraft, sent up earlier in the day from the huge, ungainly carrier, the *Furious*.

The Fleet Air Arm is still a fledgling; it thrives in spite of being doted by two foster-mothers, for under present conditions neither the Admiralty nor the Air Ministry can claim it for their own. Some day, one hopes soon, this anomalous position will be brought to an end and a service already 70 per cent. naval will come under undivided naval control. Nowhere, except in Whitehall, is the obvious and urgent necessity for this disputed.

Meanwhile good will between the Services has to make up for defective administration and the Navy's air arm is likely to play a bigger and bigger part in fleet tactics.

The Special Reserve Squadrons.

The Duke of Abercorn, Governor of the North of Ireland, opened the new Belfast Headquarters of No. 502 (Ulster) Bombing Squadron, R.A.F., Special Reserve, on Oct. 30.

The following telegram was received from the Secretary of State for Air during the ceremony:—

Ulster and Belfast have a magnificent record of Imperial service in the past, and I hope they will play a prominent part in building up the Air Force reserves which are essential to the efficiency of this new and vital arm of the Imperial defence.

No. 502 Squadron is stationed at Aldergrove, Co. Antrim. It is equipped with Avros and Vickers Vimys. The Officer Commanding is Wing Cdr. A. C. Wright, A.F.C.

The second Special Reserve Squadron, No. 503, is now being formed at Waddington, Lincolnshire.

The Viceroy on the N.W. Frontier.

A *Reuter* message from Peshawar dated Oct. 26, states:—Lord Irwin, the Viceroy of India, had a two-hours' flight over the Peshawar Valley to-day, after which he received an address from representatives of the Peshawar, Kohat and Harara districts, in which questions were raised concerning the frontier.

He claimed that he had viewed these questions from a different angle from any of his predecessors because no previous Viceroy had experienced the good fortune to view the frontier from the air.

Upside-down Flying.

Flt. Lt. H. C. Calvey of No. 23 (Fighter) Squadron, R.A.F., in a Sopwith Snipe (B.R.2 engine) succeeded in flying upside-down, at Henlow, on Nov. 1, for seven minutes and four seconds.

This is claimed by the daily press to be a World's Record, although no such record is recognised by any governing body of the Sport of Flying. It is, however, a very interesting demonstration of the controllability of this very antique machine,



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which is still, unfortunately, part of the equipment of one or two R.A.F. Squadrons.

The machine on which Flt. Lt. Calvey's feat was performed was fitted with a special auxiliary petrol tank under the fuselage. It was on view at the Air Display at Croydon on Oct. 23, with its auxiliary tank leaking slightly—apparently as a modest way of calling attention to itself.

One sympathises with Flt. Lt. Calvey in having become the object of the attentions of the daily press. THE AEROPLANE has always endeavoured to refrain from publishing the names of individual serving officers except when they are taking part in public competitions, but in this case there does not seem to be any reason for withholding what has already appeared in several papers.

One is glad to have the assurance of the Aeronautical Correspondent of *The Morning Post* that the pilot was "securely strapped into the cockpit." Presumably Aeronautical Correspondents hang on by their tails.—C. M. MCA.

H.M.S. "Valerian."

Sir Samuel Hoare, Secretary of State for Air, has written to the first Lord of the Admiralty conveying the profound sympathy of the Air Council and the Royal Air Force on the loss of H.M.S. *Valerian*.

H.M.S. *Valerian* was sent to Baltimore in October, 1925, to assist the British Team who were competing for the Schneider Trophy.

R.A.F. SPORTS.

The Wakefield Novices Boxing Competition.

On October 27 and 28 the ninth annual tournament for the Wakefield Novices Trophies was held at the Home Aircraft Depot, Henlow, and proved a most successful meeting.

The conditions governing the tournament were altered this year, a step made possible by the generosity of Sir Charles Wakefield, Bart., who has provided another trophy for competition.

In past years one competition was held for airmen, open to Groups and certain large stations, but the recent changes in the constitution of the former rendered this somewhat unsuitable for geographical and other reasons. The provision of the additional trophy has made it possible to run two separate competitions for airmen, the "Open" for teams from stations over 500 strong and the "Junior" for stations with a strength of 500 and under. In this revised form the competitions undoubtedly go much farther towards the realisation of one of the primary objects—the cultivation of team spirit.

Over 900 bouts were fought in station eliminating competitions before the actual teams were decided.

The competition proper consisted of 94 bouts, representing the following entries:—Officers—Class "A"—Old Sarum, Digby, Martlesham, Eastchurch and Manston. Airmen (Open)—Class "B."—Henlow, Manston, Uxbridge, Halton, Flowerdown and Netheravon. Airmen (Junior)—Class "C."—Kenley, Larkhill, Martlesham, Eastchurch, Shrewsbury, Digby, Andover and Calshot.

Two rings were used at both the afternoon and evening sessions on Wednesday, and such good progress was made that the programme for the final session on Thursday evening contained 18 final bouts, and a special six-round contest between Service champions.

Although the probable winners of the Officers and Junior Airmen classes were apparent at the conclusion of Wednesday's sessions, the Open Airmen's competition presented a distinct speculation. At the start of the final session Manston led by 21 points. Henlow were second with 20. Each of these stations had four representatives in the finals, although they met each other only once—in the middle-weight contest, which was the last of the Open series on the programme.

When the middle-weight contest was announced, Manston and Henlow had won three finals each, Manston thus being still one point ahead. A fine clean fight resulted in a verdict for Henlow.

Air Vice-Marshal F. R. Scarlett, C.B., D.S.O., the President of the R.A.F. Boxing Association, complimented Henlow on winning for the second year in succession, and commiserated with Manston on losing by so small a margin after such a splendid effort. He thought that the standard of boxing was better than ever before. It was usual for the Chairman of the Association to introduce him and ask him to present the prizes, but to-night that was to be reversed. Most of his audience knew that the Chaplain-in-Chief, the Rev. H. D. L. Viener, was just retiring after 25 years' service with the Royal Navy and the Royal Air Force. On the Church side he did not propose to speak, but he could not commend too highly the very fine work he had carried out as Chairman of the R.A.F. Boxing Association. He felt sure that when the Chaplain-in-Chief took a living "somewhere in the country" he would have a boxer for his churchwarden.

After expressing his appreciation of the honour extended in being asked to present the prizes, the Rev. H. D. L. Viener, in the course of his remarks on the Wakefield Competitions, specially complimented Larkhill—a station of only 120 strong—which had not only sent a full team, but such a good team that they were runners-up in the "Junior" competition.

The whole tournament proceeded with a smoothness which

evidenced careful planning and preparation, and the organisers are to be congratulated on the very efficient manner in which they carried out their duties.

The final placings were:—

Officers.—Old Sarum, 11; Digby, 8; Manston, 5; Eastchurch, 3; Martlesham, 3.

Airmen (Open).—Henlow, 32; Manston, 31; Uxbridge, 22; Halton, 18; Flowerdown, 14; Netheravon, 10.

Airmen (Junior).—Kenley, 33; Larkhill, 27; Eastchurch, 23; Shrewsbury, 23; Martlesham, 22; Digby, 22; Andover, 11; Calshot, 9.

OFFICERS.

Heavy-weight.—Flg. Off. Bell (Old Sarum) proved much too strong for Flg. Off. Sayer (Martlesham), who took a lot of punishment before the referee intervened in the second round.

Middle-weight.—A hard fight between Flt. Off. Underdown (Digby) and Flt. Off. Wills (Old Sarum), in which the former was always a little ahead on points. Both men took considerable punishment.

Light-weight.—Flt. Off. Vigors (Manston) beat Flg. Off. Mason (Eastchurch) on points, the winner scoring freely with both hands.

Feather-weight.—Flt. Off. Addis (Old Sarum) knocked out Flt. Off. Searson (Digby) with a straight left to the point in the first round.

AIRMEN (OPEN)

Heavy-weight.—After an even first round AC. Munkley (Manston) knocked out Cpl. Daly (Halton) in the second round with a right hook to the body.

Light-heavy-weight.—L-AC. Deane (Flowerdown) and AC. Thomas (Manston) mixed it in strenuous fashion, the latter getting the decision on points.

Middle-weight.—The last fight on the programme upon which the destination of the Trophy depended, this proved one of the best of the evening. L-AC. Robinson (Henlow) used a punishing right to great advantage and was always a little ahead of AC. Christian (Manston), who was a very game loser.

Welter-weight.—AC. McGinn (Henlow) met last year's runner-up in Cpl. Kenward (Uxbridge) and piled up a good lead in the first round. Kenward fought back strongly, but failed to make up the leeway.

Light-weight.—A hard hitting bout in which AC. Wilson (Manston) proved too strong for AC. Seaman (Uxbridge).

Feather-weight.—AC. Scroggins (Uxbridge) gained a narrow points victory over AC. Hall (Halton), who made a good recovery after being put down in the second round.

Bantam-weight.—AC. Andrews (Flowerdown) fought strongly, but was outclassed by AC. Maher (Henlow).

Fly-weight.—A close fight for the first two rounds between AC. Winslade (Henlow) and AC. Brown (Netheravon). In the third round Winslade got his man in a corner.

AIRMEN (JUNIOR)

Heavy-weight.—AC. Sturgeon (Digby) had AC. Hobbs (Larkhill) down three times in the second round, and the referee intervened in the third.

Light-heavy-weight.—L-AC. Matthews (Digby) was declared the winner, his opponent, AC. Kenningale (Eastchurch), retiring after the first round.

Middle-weight.—A splendid bout between AC. Sully (Kenley) and L-AC. Neale (Shrewsbury). Sully got well ahead in the first round and put his man down, but Neale fought back magnificently in the second and third rounds and only just failed to get on terms.

Welter-weight.—AC. Moss (Kenley) scored freely with the right in the third round over AC. Cripps (Martlesham) and obtained points decision.

Light-weight.—A very close contest between L-AC. Morris (Larkhill) and AC. Simpson (Shrewsbury), the former getting just ahead to obtain the verdict.

Feather-weight.—L-AC. Pikesley (Shrewsbury) and AC. Scanlon (Larkhill) had a fluctuating fight, the former being just the better man.

Bantam-weight.—AC. Love (Kenley) boxed cleverly against fighter in AC. Iles (Larkhill), and by keeping his man at a distance won a points decision.

Fly-weight.—AC. Favell (Eastchurch) knocked out AC. Higginbottom (Martlesham) in the second round with a left hook to the body.

The winning teams were:—

Officers.—Old Sarum: Flg. Off. Bell (Heavy), Flt. Off. Wills (Middle), Flt. Off. Ingle (Light), and Flt. Off. Addis (Feather).

Airmen (Open).—Sgt. Jervis (Heavy), AC. Holman (Light-heavy), L-AC. Robinson (Middle), L-AC. McGinn (Welter), AC. Knight (Light), AC. Few (Feather), AC. Maher (Bantam), and AC. Winslade (Fly).

Airmen (Junior).—AC. Coote (Light-heavy), AC. Sully (Middle), AC. Moss (Welter), L-AC. Bailey (Light), AC. Peters (Feather), AC. Lo (Bantam), and L-AC. Morley (Fly).

Runners-up teams—Officers, Digby; Airmen (Open), Manston; Airmen (Junior), Larkhill.

Special medal for the best loser—AC. Hines (Halton).

Association Football.

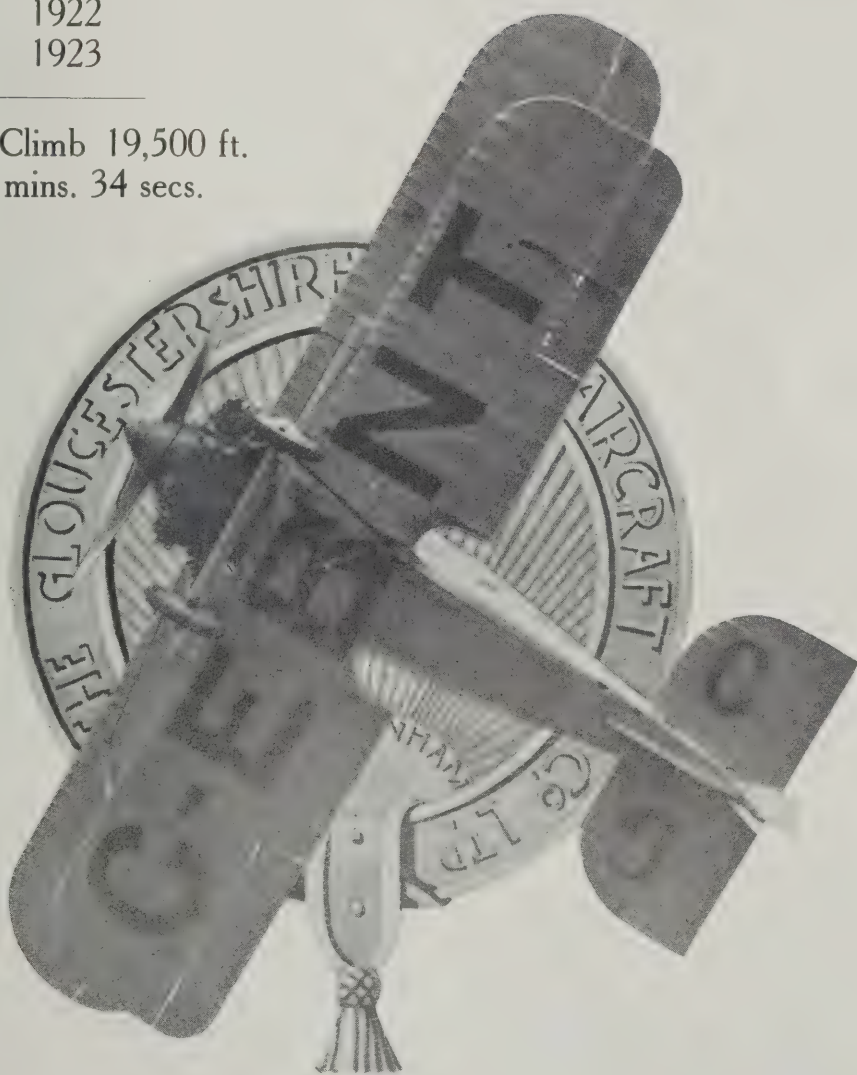
Football Association v. R.A.F.:—The R.A.F. team was beaten at Ipswich on Oct. 27, by an amateur eleven representing the Football Association, by six goals to nothing. *The Times'* account of the game states:—

The F.A. team got together from the kick-off. The half-backs, with J. G. Stevenson and F. H. Ewer, the two Corinthians, particularly good on the wings, took control of the game, and they were mainly responsible for the somewhat one-sided nature of the play. Three goals were scored in the first quarter of an hour. The R.A.F. defence was beaten completely each time, fast combined runs creating openings that were rounded off by hard, well-placed shots. When the Air Force half-backs and backs became more accustomed to the quick passing tactics of their opponents they made the game more interesting without doing much more than to show that the F.A. were as strong in defence as attack. Occasionally H. H. Gower, a S. F. Duller failed to hold the Air Force forwards, who, unlike the successful rivals, blundered in shooting, the ball usually rising over the bar, though Jackson did cause G. H. Harris some trouble. The F.A. added two goals after the interval.

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Fencing.

The R.A.F. Fencing Union beat the Birmingham Athletic Institute on Oct. 25 in a four-weapon match by 15 defeats to 21. Sq. Ldr. F. G. Sherriff, M.C., R.A.F., who was seriously injured in a flying accident last June, scored one win in the foil event and two wins in the épée event.

In the bayonet contest the R.A.F. team, consisting of Sgt. Digby, Sgt. Barber, and Cpl. Eyles, scored seven wins to two defeats.

The R.A.F. team's and the individual results were :—

Foil.—R.A.F.: Sq. Ldr. Sherriff, 1, win, 2 defeats; S-M. Reid, 1 win, 2 defeats; S-M. Bradbury, 2 wins, 1 defeat—total, 4.
Epée.—R.A.F.: Sq. Ldr. Sherriff, 2 wins, 1 defeat; S-M. Reid, 2 wins, 1 defeat; Cpl. Benson, 3 defeats—total, 4.
Sabre.—R.A.F.: S-M. Scott, 1 win, 2 defeats; S-M. Reid, 2 wins, 1 defeat; S-M. Bradbury, 3 wins—total, 6.
Bayonet.—R.A.F.: Sgt. Digby, 2 wins, 1 defeat; Cpl. Eyles, 3 wins; Sgt. Barber, 2 wins, 1 defeat—total, 7.

The Air Services Association.

A Smoking Concert has been arranged by the Air Services Association and will be held on Nov. 18, at "The Stirling Castle," London Wall, E.C. The Committee extend a cordial welcome to all former members of the R.F.C., R.N.A.S., and R.A.F.

Further information concerning the Association, which was formed originally to bring together the officers and men of the Aegean Group, may be obtained from the hon. Secretary, Douglas H. Simmonds, 50, London Wall, E.C.

A R.N.A.S. Re-union Dinner.

The R.N.A.S. Armoured Cars Reunion Dinner was held at Anderton's Hotel, on Oct. 29. Lieut.-Commander H. E. Perrin was in the Chair, and the attendance of 74 officers and ratings testified to the continued interest taken in this gathering.

All present thoroughly enjoyed the excellent concert provided by "Ourselves," which followed the Dinner.

No. 9 Squadron, R.F.C.

The following letter appeared in *The Times* on Oct. 27 :—
 Sir,—May I draw your attention to a misstatement in your Aeronautical Correspondent's article, "Aircraft and Empire," which appears in your issue of this morning? No. 9 Sqdn. was formed at Brooklands in the spring of 1915 after an earlier squadron bearing the same number had been disbanded in the field. This earlier No. 9 Sqdn. was known as No. 9 (Wireless) Sqdn., and was dispersed among certain existing squadrons at the front under a scheme designed to furnish "Corps" squadrons with wireless aeroplanes. Gunner officers were realising the value of aerial artillery observation, and were asking for more wireless co-operation. The officer commanding the dispersed No. 9 Sqdn. formed the new No. 9 Sqdn. at Brooklands.

With regard to your correspondent's assertion that No. 9 was alone in possessing theatre-of-war birthplace, he has, I am afraid, overlooked the case of No. 16 Sqdn., Royal Flying Corps, which had its humble beginnings in the *personnel* turned out into a cold world by those squadrons to benefit by No. 9 (Wireless) Sqdn.'s dispersal. I think he will find that No. 16 Sqdn. was formed at St. Omer on Feb. 10, 1915.

There is another point to which I would like to draw attention. Your correspondent refers to the single-seater fighting aeroplane as "a defensive machine." Surely, this type of aircraft is, for all service beyond that of Home Defence, essentially offensive? Might one not as justifiably call the bombers defensive machines because on occasion they are sent to subdue an enemy's offensive spirit by excavating craters on his aerodromes?

(Signed) A. J. INSALL.

The article in *The Times* to which Mr. Insall refers, was apparently based on the unfortunate official programme of the visit of the Imperial Conference to Croydon, and contained the following statement.

The other two squadrons, Nos. 9 and 58, which will carry out manoeuvres in the night bombers, have honourable records of service, the first since the early days of the war as the only squadron ever formed in the field.

Military Education.

The following letter has been received :—

Sir,—By obvious inadvertence two paragraphs in your summary of my concluding lecture on the "Battles of the Somme, 1916," were misplaced, and appear as statements made by Lieut.-General Sir Archibald Montgomery-Massingberd, who was in the Chair. As it is undesirable that he should have fathered onto him opinions which he did not express, I should be very grateful if you would insert a correction in your next issue. The misplaced paragraphs, which should have appeared as part of my lecture, read as follows :—

Referring to the relations between Statesmen and Generals, he said that the Secretary of State for War in 1916 did not understand war and would not consult military authorities. He said that French Generals were continually insecure. As an example of this he said that General Joffre was removed from the Supreme Command for saying that the offensive spirit of the French Army was broken at Verdun.

In conclusion, he said that a strong standing Army was the best insurance a country could have against war.

(Signed) W. E. de B. Whittaker (Major).

Those Secret Racers.

When Great Britain decided early this year that she would not compete in the Schneider Trophy Contest it may be remembered that the Air Ministry announced with much *éclat* that it had ordered three machines and that these three machines would go for speed records at the same time as the Schneider Trophy Contest was flown.

It may be remembered that THE AEROPLANE hazarded the opinion that it was very unlikely that three racers would be ready in time.

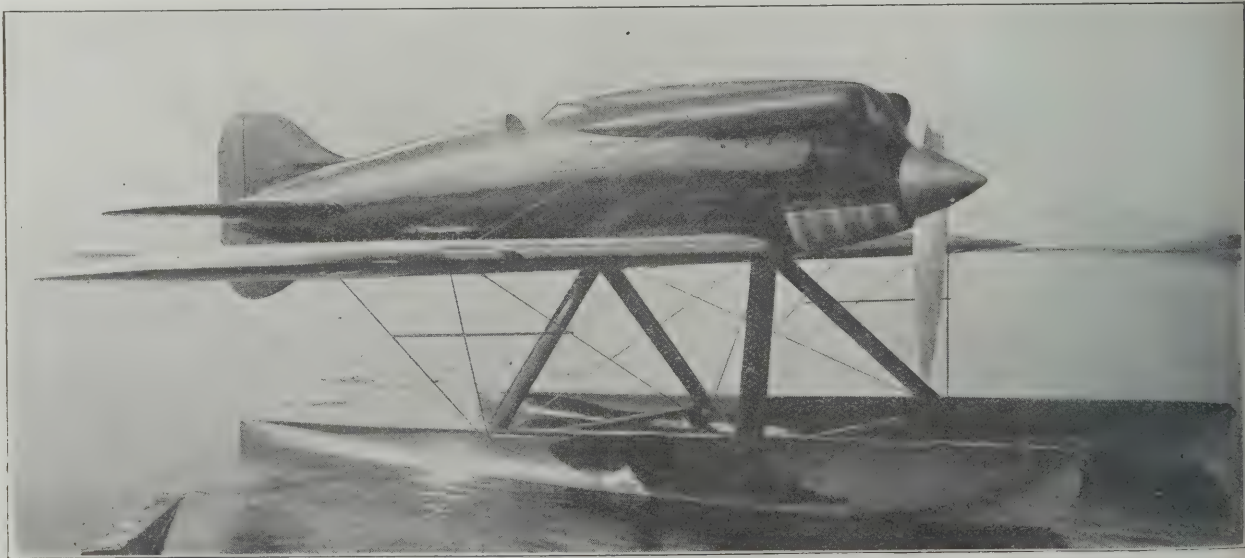
Therefore it may be of interest to see why we have not yet heard of any progress with these machines.

Lt.-Col. Bristow's Crusader, the construction of which was undertaken by Short Brothers, has been completed, but is waiting for its 800 h.p. Bristol Hercules (or is it the Orion?) engine. This should be delivered any day now, and the machine may be in the air before Christmas. Mr. Bert Hinkler is the test pilot elect.

The Supermarine-Napier S.5 low-wing monoplane and the Gloster-Napier IV biplane have both been delayed waiting for the mock-up of the new higher-powered and re-shaped Napier Lion engine which they have only just received. One is told that both look very clean.

Mr. Hubert Broad has been testing various versions of the Gloster III known as the IIIa and IIIb at Felixstowe. These are the two 1925 Gloster racers fitted with variations, such as wing radiators, modified tails, wings, etc. From these tests much information has been obtained for the Gloster IV.

Meanwhile a "High-Speed Flight" of R.A.F. picked pilots has been formed at Felixstowe, and is practising on the Bamel and the Glosters. The new racers will be handed over to this Flight when the tests have been completed.—G. D.



THE ITALIAN SCHNEIDER TROPHY ENTRY.—The Macchi 39 racing monoplane seaplane, two of which will compete for the Schneider Trophy at Hampton Roads, Virginia, U.S.A., on Nov. 11. The M.39 has been designed by Ing. Castoldi and has an estimated top speed of 262 m.p.h.

Blackburn

IRIS



The pilot flew successively on the various combinations of his three engines. First he flew with his port engine stopped. Later he stopped his starboard engine & proceeded to fly in a circle against the "dead" engine. With any one of the three engines stopped the machine was able to gain height.

See "Aeroplane" Oct. 6th 1926.

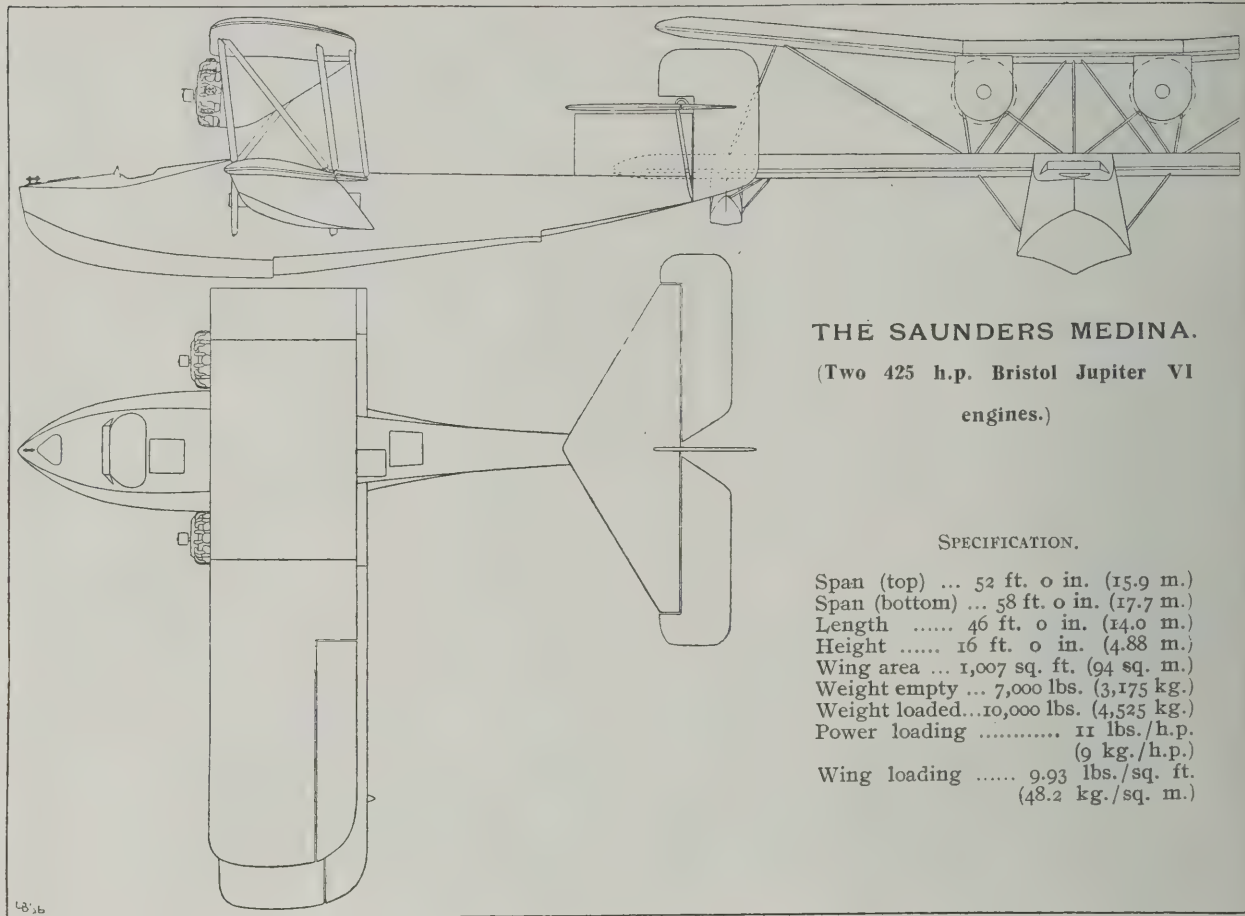
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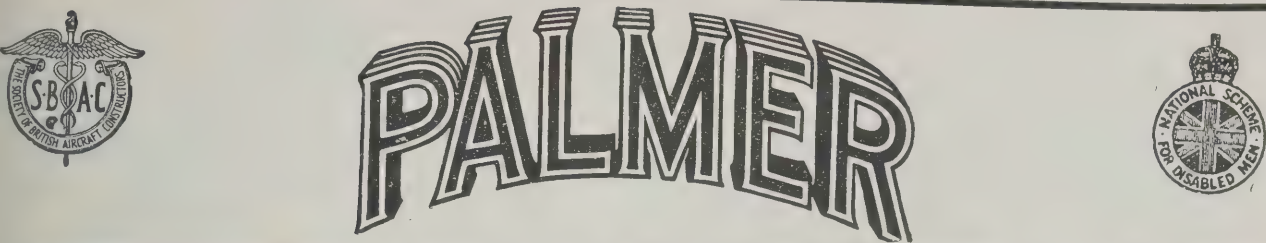
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| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|-----------|-----------|--------|-------|------------|-----------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375×55 | 168 | 111.12 | 25.4 | Central | 700×100 | 112 | 150. | 38.09 | Central | 1000×150 | 210 | 185. | 60.32 | Central |
| 300×60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000×180 | 148 | 220. | 80. | Central |
| 450×60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650×125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575×60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900×230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750×125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650×65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | " | | | | |
| 600×75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | 1100×220 | 134 | 220. | 66.67 | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800×150 | 161* | 185. | 55. | 135/50 | " | 136 | 250. | 80. | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975×225 | 192 | 185. | 60.32 | Central |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 194 | 185. | 55. | 125/60 |
| 700×75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | " | | | | |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | 1250×250 | 133 | 250. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | " | 154 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | 1500×300 | 115 | 304.8 | 101.6 | Central |
| 700×100 | 77 | 178. | 44.45 | 132/46 | 1000×150 | 167 | 185. | 55. | 125/60 | " | 126 | 304.8 | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | 1750×300 | 139 | 400. | 152.4 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | " | 191 | 350. | 150.3 | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | 1750×350 | 193 | 400. | 125. | Central |
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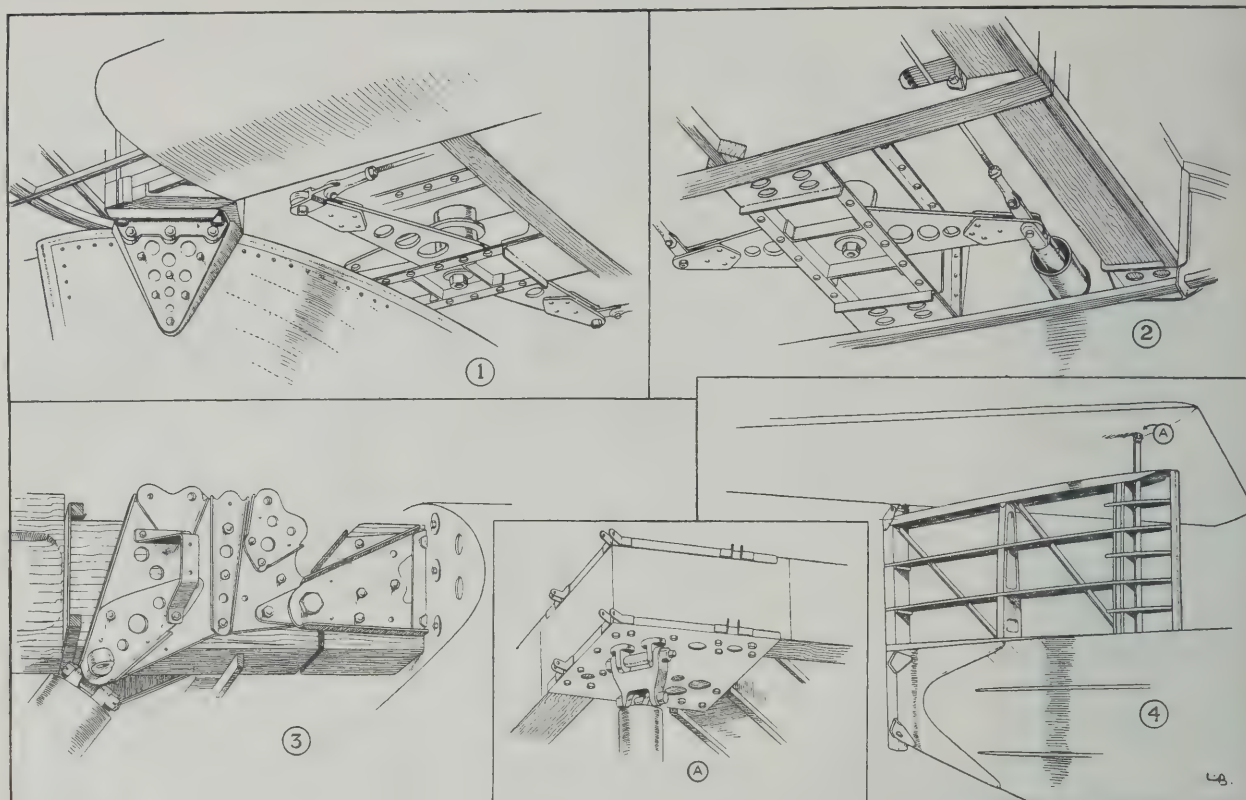
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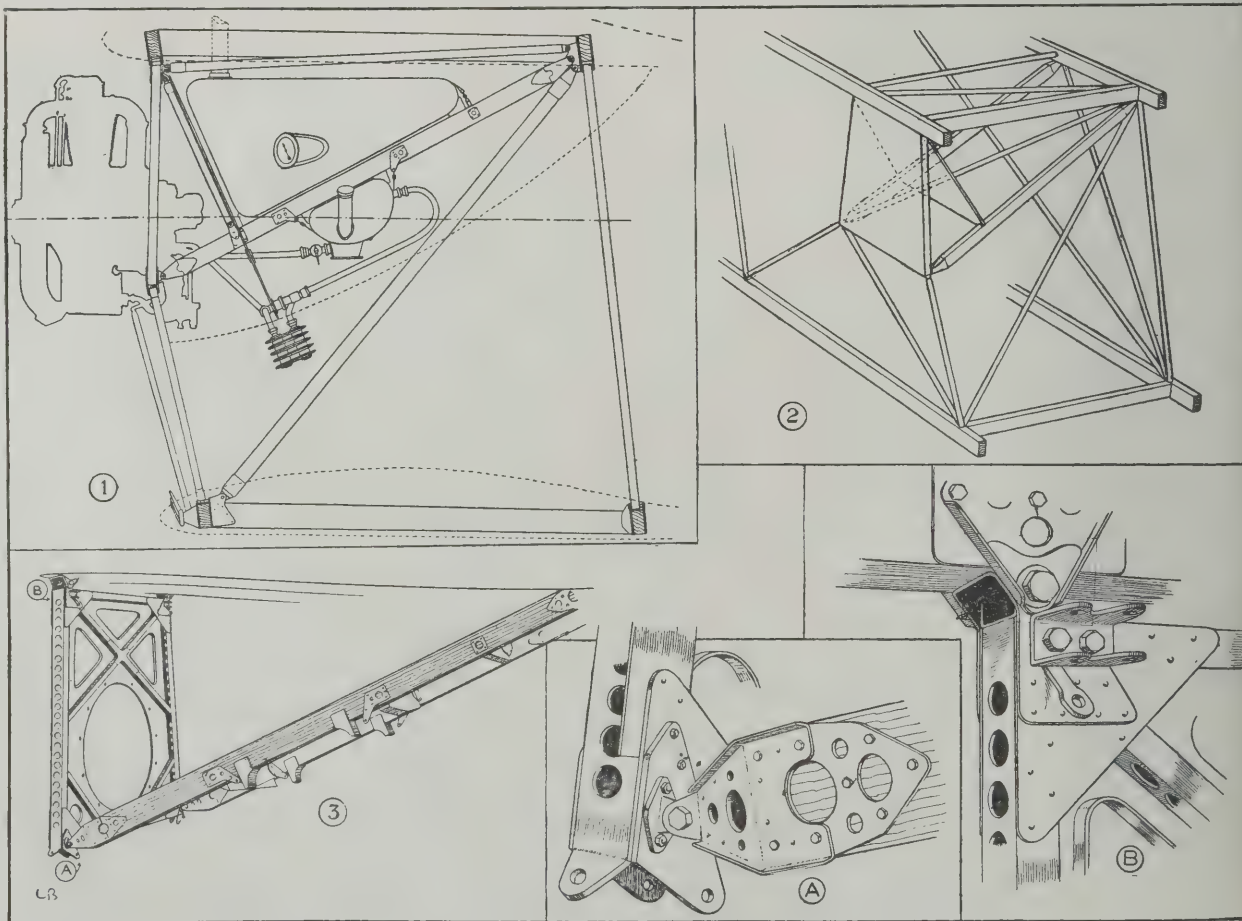
THE SAUNDERS MEDINA.—Some constructional details. (1) and (2) aileron control details; (3) the bottom port front spar joint, and (4) the fin and tail-plane. (A) Shows the attachment of the incidence tube to the nose of the tail plane.

complicated system of struts which can more easily be illustrated than described.

Fuel and oil tanks are carried behind each engine, supported on substantial spruce beams which run diagonally up-

wards from the bottom of each engine plate to the rear spar of the top wing. These tanks are so arranged that they may be withdrawn sideways after removing the cowlings.

The centre section itself is supported as regards the front



THE SAUNDERS MEDINA.—The engine mountings (1) Side elevation showing the position of the petrol and oil tanks, etc.; (2) a perspective sketch of the port engine mounting, and (3) an engine-bearer plate and the spruce beams bracing it to the rear spar. A and B show the top and bottom engine-bearer plate attachments.

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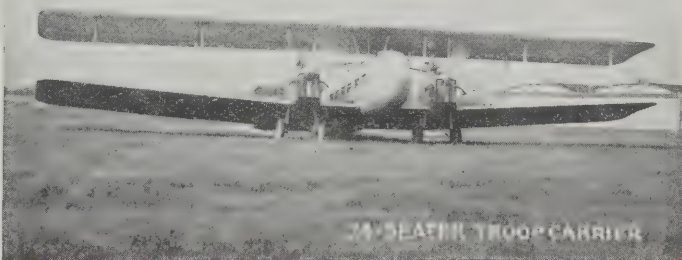
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Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...6,850 lbs
Approx. Full Speed...108 m.p.h. Minimum Speed...46 m.p.h.

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spar by a vertical strut on the centre-line of the hull, and through the engine mountings and their bracing system.

The rear spar is supported at the centre on the apex of an inverted Vee which springs from the lower rear spars below the engine centre lines, and at its outboard ends by vertical struts immediately behind the engines.

The lower wing centre section is built into the hull, and is braced by two tubes on each side. These are attached to the hull in the plane of two main hull bulkheads situated one at each end of the passenger cabin.

From the junction of the lower wing extension with the wing root, two tubes per side, one on each spar, run upwards and outwards to the corresponding spars of the upper wing where they meet a pair of interplane struts which rake slightly outwards and downwards. A rigid diagonal tube between these latter interplane struts takes the place of the usual "incidence" wiring.

The outer sections of the upper wing have a dihedral of 5°. The lower wing is flat throughout. Both upper and lower wings are fitted with ailerons, which are interconnected top and bottom by one strut on each side.

THE TAIL UNIT.

The horizontal tail plane is triangular in plan form and is carried well above the hull over a rectangular fin. The tail-plane is supported at its leading edge on the centre line by a tubular member attached within the hull to a screw-jack gear which raises and lowers the leading edge to control the tail incidence. The rear edge of the tail-plane is hinged to the top of the stern-post, which is continued to form the rear edge of the fin. Here it is supported and is braced at the tips by tubular struts running to the bottom of the hull. Divided and balanced elevators are hinged to the rear edge of the tail-plane, and a large balanced rudder to the stern-post and rear edge of the fin.

THE CONTROL SYSTEM.

One of the most interesting features of the Medina is the very unusual system of control connections used.

Except that in the case of the ailerons swaged rods are used as tension members for part of the system and for

two chain and sprocket connections, the whole of the control connections are made with steel tubes, acting either as push-and-pull rods, or as rotating shafts. The system appears to be somewhat complicated, somewhat expensive, and somewhat heavy, but it is difficult to see how rigid control connections could be contrived without these qualities, and such controls were required to be used in this case by the specification.

Considering how serious are the troubles found with controls of normal type on seaplanes as a result of rapid corrosion some such system is certainly worthy of practical trial.

Rudder and elevator connections are throughout made by a series of tubes which form a continuous push-and-pull system from rudder bar or control column to rudder or elevator levers. The tubes are in straight or nearly straight lengths, jointed one to another by universal joints, and supported at each joint by a radius link hinged to some rigid member of the hull structure which constrains each joint so supported to move only in the desired plane.

The wheel controlling the ailerons drives through a system of chains and sprockets a fore and aft shaft which runs at the side of the hull to below the front wing spar. A chain and sprocket at the end of this shaft is coupled to a transverse tube lying just behind the front spar and running right across the hull and out into the lower wing root. This cross tube is made to move endwise by rotation of the wheel.

A link couples each end of the tube to a centrally pivoted lever carried from the front spar, and this in turn is coupled by straight swaged rods to a second lever also carried from the front spar. This second lever has a third arm controlling a push-and-pull rod coupled to the aileron king-post.

The tail incidence handwheel drives a fore and aft rotating shaft through chains, sprockets and a bevel drive. The rotating shaft in turn drives the tail screw-gear through a bevel gear.

The engine controls are also of the rigid type. Throttle and altitude levers are directly coupled by pull-and-push rods to levers on torque shafts run in the leading edge of the lower wing, and further levers on these tubes control push and pull rods running up to the engine mountings.

THE PARIS AERO SHOW.

On Dec. 3, the tenth *Salon de l'Aéronautique* opens at the Grand Palais, Champs Elysées, Paris. The number and the internationality of the exhibitors has increased over previous exhibitions.

Great Britain will be represented by Armstrong-Whitworth and Bristol; Holland by Fokker and Koolhoven; Czechoslovakia by Avia, Aero and Smolik; and Italy by Fiat and Isotta-Fraschini. Germany will not be present, owing to the fact that their entry into the F.A.I. was too late for them to obtain any space in the Grand Palais,—which is a very French method of eliminating competition.

The following is a provisional list of aircraft exhibitors occupying large stands in the *Grand Nef*, arranged in alphabetical order:—Aviméta (Société pour la Construction d'Avions Métalliques (Schneider); Ateliers et Chantiers de la Loire (Gourdou-Leseurre); Ateliers des Mureaux; Aero (Prague); Armstrong-Whitworth; Blériot Aéronautique; Breguet; Béchereau; Marcel Besson; Caudron; Farman; Fiat; Hanriot; Koolhoven; Liore-et-Olivier; Levasseur; Milos

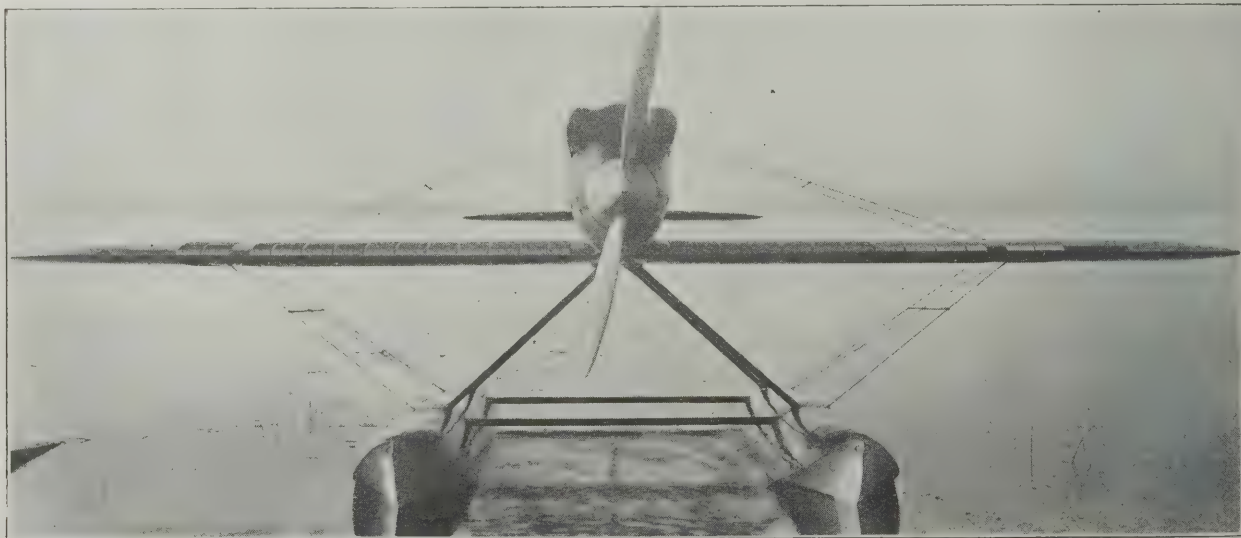
Bondy (Avia); Morane-Saulnier; Fokker; Nieuport-Astra; Potez; S.E.C.M.; S.I.M.B. (Bernard); Louis Schreck; Villiers; Smolik.

Other exhibitors of aircraft having stands other than in the *Grand Nef* will be:—Dyle and Bacalan; Descamps; Wibault; and the following air traffic companies: Air Union; Latécoère; Farman; and C.I.D.N.A.

The Bristol and Isotta-Fraschini exhibits will be solely engines, and these will be accommodated in smaller stands to be found round the *Grand Nef* in company with other engine exhibitors.

THE CIRRUS MARK II.

Since the appearance of the description of the Cirrus Mk. II engine in *THE AEROPLANE* of Oct. 27, a later version of a power curve for this engine has been received. This new curve shows a slightly increased output (78.5 b.h.p. at 1,800 r.p.m.) together with a notable decrease in petrol consumption, which at normal r.p.m. (1,800) and full throttle has now reached .56 pints per b.h.p. hour instead of slightly over .60 pints shown on the original curve.



FRONTAL AREA.—The Macchi 39 racing seaplane designed for participation in the Schneider Trophy Contest to be held at Hampton Roads, Virginia, on Nov. 11. The engine is a Fiat AS-2, a development of the A-22. Its nominal h.p. is 800 with a maximum of 845 h.p., and the engine light weighs 831 lbs. The airscrew is a Curtiss-Reed of the latest type.

SIR ALAN COBHAM'S FLIGHT TO AUSTRALIA.



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THE AMERICAN NATIONAL AIR RACES.

The 1926 National Air Races were held at Philadelphia during the Sesqui-Centennial Exhibition, from Sept. 4-11.

Owing to the absence of a permanent flying field suitable for the purpose, a special field was laid out by the Schuylkill River, to the west of the Exhibition grounds, and this was known as the Model Farms Field. Adjoining this field is the Municipal Airport which was used for the accommodation of civilian aircraft.

Pitcairn Field to the North of the city was used as a base for all Army Air Corps Aircraft and Mustin Field, Philadelphia Navy Yard, was used for all U.S. Navy aircraft. The Ludington Exhibition Company's Field at Pine Valley, N.J., was also available for civilian aircraft.

Two triangular courses, one of five, and one of twelve miles, were laid out from the Model Farms Field.

It appears that the races were not a success. The mistake was made in keeping the meeting going too long, and no provision was made for the possibility of bad weather. As it turned out, the weather was bad, with plenty of rain, and as the Model Farms Field was originally a marsh below the level of the Delaware River, conditions became so impossible for aircraft that in the end the service aircraft were compelled to take off from their respective fields in order to take part in the various races, as landing and taking off from the Model Farms Field became dangerous.

The total attendance for the week has been reported to be not more than 20,000, which, compared with the attendances at one-day Pageants organised by our Lancashire and Yorkshire Flying Clubs, without the municipal assistance and press booming of the American meetings, seems ludicrous.

The following is a brief resumé of the results:—

The *On-to-Sesqui Race* (14 entries) for the Sesqui-centennial Trophy, which was open for competition up to Sept. 4 was won by Fred Hoyt, who flew in a Travel-Air biplane (90 h.p. Curtiss O.X.5) from Eureka, Cal., to Philadelphia, 2,558 miles, in 31 hours' flying time. Second and third prizes went to Austin Lawrence and Ross Arnold, both of whom flew Curtiss J.N.4s from Dallas, Texas.

On Sept. 4 the races were officially opened by Miss Gloria Swanson, a film actress, who fired the starting gun.

The first eliminating race for *The Aero Club of Pennsylvania Trophy* (17 entries), for two- or more-seat low-powered aircraft was won by Basil Rowe on a modified Thomas-Morse S.4E. (Aeromarine engine), at 109.59 m.p.h.

"Casey" Jones on a clipped-wing Curtiss Oriole (Curtiss C.6 engine), won *The Independence Hall Trophy* (12 entries) for two-, three- or four-seat aircraft, at 136.1 m.p.h. Second place went to James Ray, on a Pitcairn Sesqui-wing Arrow, with a speed of 127.8 m.p.h.

A prize of \$50 given daily for a parachute jumper landing closest to a mark provided some interest when Alva Starr of the Lakehurst Naval Air Station landed in a swamp near the machine park from which he was extracted with difficulty.

On Sept. 6 the programme began with a model contest for the *Mulvihill Trophy* (19 entries). This event is mentioned because it was the only one of international character of the whole meeting, two entries from the Society of Model Engineers, Wembley, England, competing. What they were is not known.

The race for the *B.B.T. Trophy* (four teams of three) was a relay contest. The race was over three laps of 12 miles and at the end of each lap each team machine landed and the passenger unfastened a pennant, fastened to one of the struts, ran 200 yards to the next machine of the team on the starting line, and tied the pennant to the strut, the machine then taking off. This event was won by Basil Rowe's team which consisted of Basil Rowe (Thomas-Morse), Casey Jones (Curtiss Oriole), and A. H. Kreider (Waco 9).

The last event of the day was for *The National Guard Trophy* (13 entries). All pilots were National Guard officers and all flew Curtiss J.N.4 biplanes. The first three places went to officers of the New York National Guard, Lieut. C. W. Rach, first; Lieut. C. J. Sack, second, and Lieut. L. F. Long, third.

Heavy rains on Sept. 6 made the flying field too muddy for safety, and the programme for Sept. 7 was postponed until Sept. 12.

On Sept. 8 the second eliminating race for *The Aero Club of Pennsylvania Trophy* was run. Fred Hoyt won this event on a Travel-Air biplane (Curtiss O.X.5) at 96.5 m.p.h.

Lieut. F. H. Conant, U.S.N., won the Trophy in the *Aerobatic Contest* for Army, Navy, and Marine Corps pilots. Lieut. G. T. Cuddihy and Lieut. G. R. Henderson were placed second and third.

The Efficiency Race for *The Aviation Town and Country Club of Detroit Trophy* (13 entries) was won by C. C. Champion, Jr., on the new Wright-Bellanca monoplane (200 h.p. Wright Whirlwind). Carrying a load of 1,292 lbs., exclusive of pilot and fuel, he averaged 121.358 m.p.h. Walter Beech

on a Travel-Air biplane (200 h.p. Wright Whirlwind) was second.

The Speed Race for the same Trophy was won by J. G. Ray, who, on the Pitcairn Sesqui-wing Arrow, averaged 136.372 m.p.h. This race provided many thrills, as it turned out to be a speed contest between Casey Jones on the clipped-wing Oriole and J. G. Ray on the clipped-wing Arrow. Jones's speed for the first lap was 133.4 m.p.h., Ray's speed 127.9 m.p.h. In the second lap Ray averaged 132.46 m.p.h., Jones 133.52 m.p.h. On the lap Ray passed Jones and won at 136.372 m.p.h. Jones averaging 132.148 m.p.h. for second place.

The last event was a light aeroplane race (four entries) for the *Aero Digest and Betsy Ross Speed and Efficiency Trophies*. The winner of both Trophies was E. B. Heath on the Heath Tomboy monoplane (34 h.p. Bristol Cherub) who averaged 91.29 m.p.h. A. H. Kreider on a K.R.A. monoplane (38 h.p. Wright-Moorhouse) and J. Laass on a Driggs Dart (38 h.p. Wright-Moorhouse) finished second and third respectively. C. W. Meyers on the Meyers Midget (34 h.p. Bristol Cherub) forced-landed on his sixth lap.

On Sept. 9 the first race was the final for *The Aero Club of Pennsylvania Trophy*. This was won by R. P. Hewitt on a Waco 9 at 107.516 m.p.h. Basil Rowe (Thomas-Morse) and Casey Jones (Curtiss Oriole) were second and third.

A landing contest for *The Valley Forge Trophy* was won by D. Davis who came to rest within five feet of the prescribed mark.

The Liberty Engine Builders' Trophy for standard service observation aircraft was won by Lieut. O. L. Stevens, A.C., on a Curtiss Falcon at 142.6 m.p.h., with Capt. Hornsby, A.C. (Curtiss Falcon), Lieut. G. T. Stevens, U.S.N. (D.H. Special), and Major Pirie, A.C. (Curtiss Falcon), second, third and fourth respectively, all of whom received individual trophy awards. The competing machines were:—Army—Four Curtiss Falcon (O-1) and six Douglas O-2, all fitted with Liberty engines, and Navy—One D.H. special (Liberty) and one Vought V.O.-1 (Whirlwind).

On Sept. 10 the U.S. Naval airship *Los Angeles* landed on the field and during the day the ill-fated Sikorsky S-35 flew over en route to New York from Washington.

The first race was for *The Liberty Bell Trophy* for large-capacity military aircraft. The entries were three Huff-Daland L.B.-1 bombers (800 h.p. Packard) and three Douglas C-1 transport biplanes (400 h.p. Liberty). The winner was Lieut. L. M. Wolfe, A.C., on a Huff-Daland, who averaged 123.174 m.p.h. Second and third places went to Huff-Daland L.B.-1s, the three Douglas C-1s taking fourth, fifth and sixth.

The last race of the day was for *The John L. Mitchell Trophy* for pursuit aircraft belonging to the 1st Pursuit Group, U.S.A.C. All entrants were on Curtiss Hawk (P-1) fighters (420 h.p. Curtiss D.12). The winner was Lieut. L. G. Elliott, A.C., who averaged 160.38 m.p.h.

On Sept. 11, C. C. Champion, Jr., won *The Detroit News Air Transport Trophy* for speed and efficiency on the Wright-Bellanca monoplane by covering 120 miles in 59 mins. 16 secs. carrying a load of 1,050 lbs.

The second event of the day was *The Kansas City Rotary Club Trophy Race* which took the place of the Pulitzer Trophy Race. This was won by Lieut. G. T. Cuddihy, U.S.N., on a Boeing F.B.-3 (600 h.p. Packard) at 180.49 m.p.h., Lieut. L. G. Elliott, A.C., Curtiss P-2 (500 h.p. Curtiss V.1400) 178.6 m.p.h.; Capt. Ross Hoyt, A.C., Curtiss P-2 (500 h.p. Curtiss V.1400) 170.9 m.p.h.; Lieut. C. C. Nutt, A.C., Curtiss P-2 (500 h.p. Curtiss V.1400) 170.7 m.p.h.; Lieut. H. F. McCormick, A.C., Curtiss P-2 (500 h.p. Curtiss V.1400) 169.58 m.p.h.; Lieut. H. D. Barnes, U.S.N., Curtiss F.6C-1 (440 h.p. Curtiss D.12) 163.5 m.p.h.; Lieut. L. M. Sanderson, U.S.M.C., Boeing F.B.-3 (600 h.p. Packard) 163.3 m.p.h.; Lieut. A. B. Ballard, A.C., Curtiss P-1 (440 h.p. Curtiss D.12) 159.2 m.p.h., finished in this order.

Lieut. Crumrine, A.C., Curtiss P-1 (400 h.p. inverted air-cooled Liberty) 167.7 m.p.h. and Lieut. C. C. Champion, U.S.N., Wright Apache (425 h.p. Pratt and Whitney Wasp) 168.8 m.p.h. were disqualified for cutting a pylon.

On Sept. 12, the following events postponed from Sept. 7 were held. The relay race for *The Benjamin Franklin Trophy* was won by Basil Rowe's team, consisting of Basil Rowe, Casey Jones, and A. H. Kreider.

The Dayton Daily News Light Aeroplane Trophy was won by E. B. Heath in the Heath Tomboy (34 h.p. Bristol Cherub) at 86.45 m.p.h., with J. Laass on the Driggs Dart (Wright-Moorhouse) 82.76 m.p.h., and A. H. Kreider on the K.R.A. monoplane (Wright-Moorhouse) 76.7 m.p.h., second and third respectively.

The last event of the day and meet was a light aeroplane race for *The Scientific American Trophy*. This was won by A. H. Kreider on the K.R.A. monoplane at 94.49 m.p.h., with E. B. Heath, Heath Tomboy (Bristol Cherub) 91.21 m.p.h., second; C. D. Chamberlain, Bellanca monoplane (Laurence) 89.3 m.p.h., third, and H. J. Laass, Driggs Dart (Wright-Moorhouse) fourth at 85.38 m.p.h.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIR DEFENCE FOR AUSTRALIA.

In the course of a lecture before the Aero Club of Sydney, New South Wales, on Sept. 20, Sq. Ldr. F. E. Sandford, A.F.C., late R.A.F., and at present the representative of the Blackburn Co. in Australia, said that he considered that the only way Australia could be defended was by establishing a large force of torpedo-carrying aeroplanes. He said that he did not believe that warships or armies would prevent an invasion; warships could not always stall off an enemy and an army would not come into action until an enemy had landed.

Sq. Ldr. Sandford, who was one of the earliest Australian pilots in the R.N.A.S., and certainly one of the best engineers who ever served in the R.A.F., pointed out that war experts had not always appreciated the value of new mechanical equipment. He did not think that Australia required a Navy—except submarines. He thought that with torpedo-carrying aircraft and submarines small nations could protect their harbours and coast-lines. Large flying-boats were required for the heavy seas round Australia.

He went on to say that it would take years to create an aircraft manufacturing industry in Australia, and suggested that the Government should devote the Navy Vote to aircraft. Air defence was more important for Australia than for England because of Australia's geographical position and limited expenditure.

He concluded by saying that he did not see that Australians could blame the Japanese for resenting Australia's prohibition of Japanese immigration, and inferred that Australia must be prepared to support her prohibition by force of arms,—preferably by Air Power.

AN AUSTRALIAN RECORD.

On Oct. 22, Capt. Johnstone, of the Queensland and Northern Territories Aerial Services, flew from Longreach (Queensland) to Melbourne, a distance of 1,100 miles, in 610 minutes (ten hours, ten minutes). This is claimed to be a record for an Australian one-day flight.

The journey from Longreach to Melbourne by other means of transport takes about six days.

FRANCE—MADAGASCAR—FRANCE.

On Oct. 12 two flying-boats of the French *Aéronautique Maritime* left Berre, near Marseilles, to fly to Madagascar and back to St. Raphael.

The two boats are a C.A.M.S.37 (450 h.p. Lorraine-Dietrich engine), piloted by *Lieut. de Vaisseau* Guilbaud and carrying *Maitre Principal* Bougault, and a Lioré and Olivier (420 h.p. Jupiter engine) piloted by *Lieut. de Vaisseau* Bernard and carrying *Second Maitre* Garrat.

The route they will follow will be by the coasts of Morocco and Mauritania to St. Louis, in Senegal. Thence they will follow the courses of the Senegal, Niger, Oubangui and Congo rivers to Lakes Tanganyika and Nyassa, and the east coast, crossing the Mozambique Straits to Majunga, Madagascar.

They will return via the valley of the Nile. The total distance will be 26,000 kms. (approximately 16,000 miles) and will take three months.

They left Berre at 05.50 hours on Oct. 12 and arrived at Tangier at 16.00 hours.

On Oct. 13 they arrived at Casablanca.

On Oct. 15 they left Casablanca for Adair and Las Palmas.

On Oct. 18 they arrived at Port Etienne from Las Palmas.

On Oct. 22 they alighted on the Senegal River at Kayes.

On Oct. 24 they arrived at Bamako, on the Niger River.

PRACTICAL EXPERIENCE.

Flying on the organised air lines seems to be growing popular among those concerned with aeronautical publications, following on the journeys made by Mr. Lester Gardner of *Aviation*, New York, who covered all the European air-lines, besides the Cairo—Baghdad and Toulouse—Casablanca routes, and Mr. Lowell Thomas, who has flown over most of the European air lines.

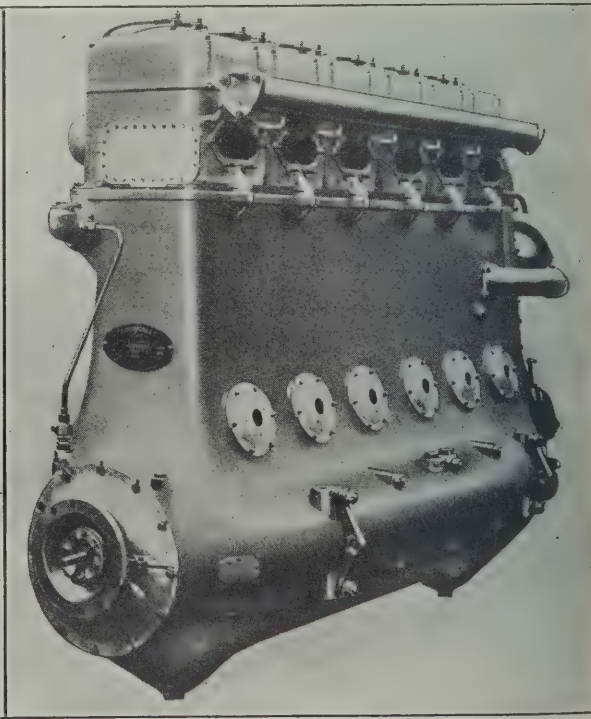
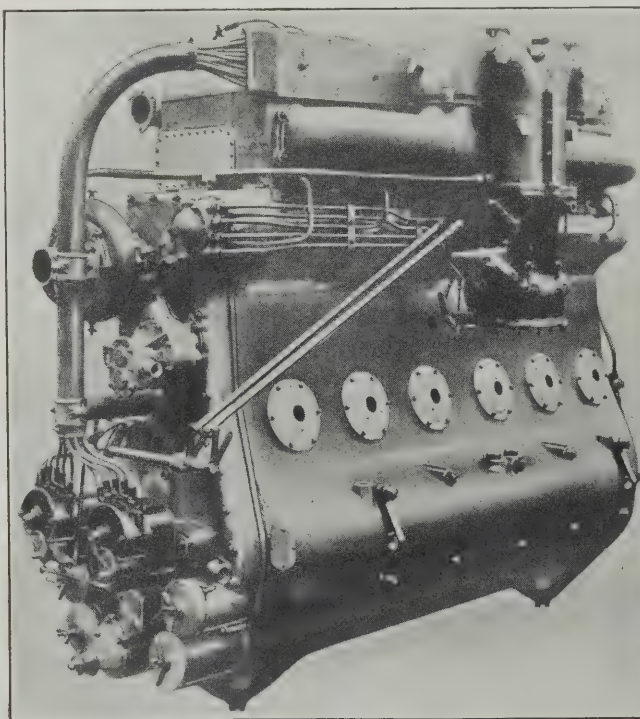
The latest air tourists are the Commendatore Attilio Longoni (Director of the *Gazzetta dell'Aviazione*, the well-known Italian weekly paper, and *L'Ala d'Italia*, the monthly review), and his chief editor, Signor Angelo Castiglioni. These two gentlemen have been touring the whole of Europe by air to study the organisation of commercial aviation in European countries.

They recently honoured the office of THE AEROPLANE with a visit in the course of their tour and thanks to the kindly assistance of Signor Drebertelli, the London representative of their papers, one was able, in spite of one's lamentable ignorance of the Italian language, to have quite an interesting conversation with them.

They were particularly interested in the three-engined Argosies and D.H.66s, which have been built for Imperial Airways Ltd. and expressed their appreciation not only of the three-engined scheme but of British construction in general.

THE R.Ae.C. MONTHLY HOUSE DINNER.

The First Monthly House Dinner of the present Winter will be held at the Royal Aero Club on Wednesday next, Nov. 10, at 19.00 hrs. Mr. F. Handley Page will open a discussion on "British Aviation," and the Chair will be taken by Lord Thomson. Seats should be booked at once, as space is limited to 60 diners.



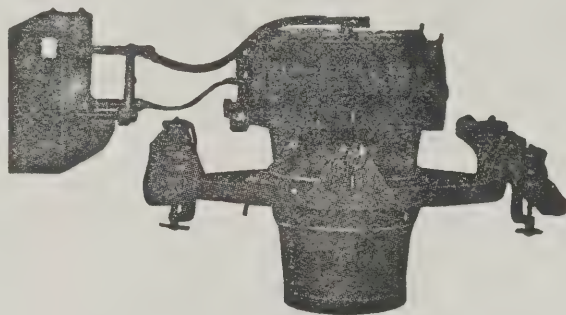
THE BEARDMORE CYCLONE MARK II ENGINE.—This is a new version of the Beardmore Cyclone. It is a six-cylinder vertical engine of high power running at a low speed. It has cylinders 8 5/8 in. bore by 12 in. stroke, a compression ratio of 5 1/4 / 1 and develops 850 b.h.p. with a small and 950 b.h.p. with a large carburettor at 1,350 r.p.m. for a dry weight of 2,150 lbs.

The Cyclone Mk. II is approximately 7 ft. 6 in. long, 5 ft. 1 in. high, and 2 ft. 11 in. maximum width.

A notable feature of the engine is the very low consumption of fuel and oil—.48 lbs. of petrol and .01 lbs. of oil per b.h.p. hour. For aircraft operating over long stages this economy of fuel and oil may be very important.

Eastman Aero Camera Model K1 *for Topographical Work*

The Eastman Aero Camera (Model K1) is entirely automatic in action. Driving power is provided by a wind motor containing a rotary paddle wheel, with a lever control, which also regulates intervals between exposures. Any number of exposures—size $9\frac{1}{2}$ ins. x $7\frac{1}{8}$ ins. (18 x 24 cm.)—up to 100 can be made on one 75 ft. roll of Eastman Daylight Loading Film. The film is held flat by the constant suction caused by the Venturi tube. Shutter speeds can be varied at will from 1/90 to 1/310th of a second. Fitted with either 12 in. or 20 in. f4.5 lens.



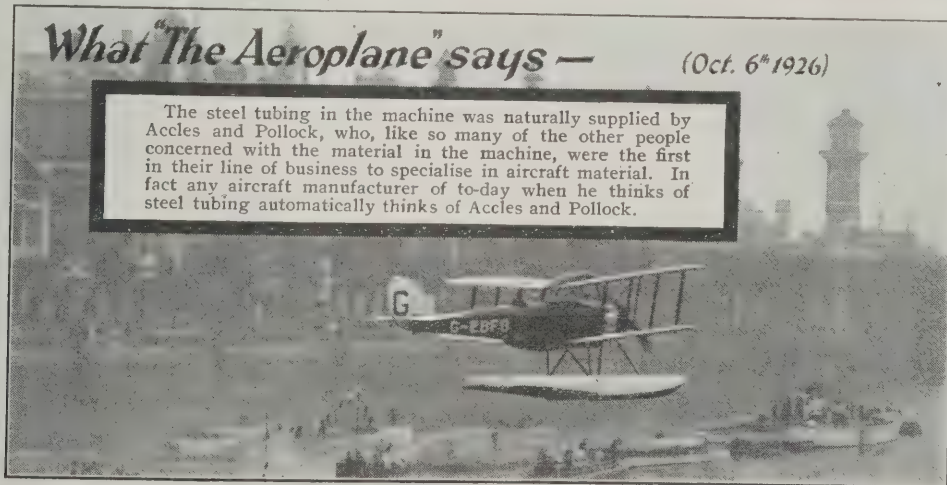
Further particulars post free on application to
Kodak Limited, Kingsway, London, W.C. 2

PROOF OF TUBULAR EXCELLENCE

What "The Aeroplane" says —

(Oct. 6th 1926)

The steel tubing in the machine was naturally supplied by Accles and Pollock, who, like so many of the other people concerned with the material in the machine, were the first in their line of business to specialise in aircraft material. In fact any aircraft manufacturer of to-day when he thinks of steel tubing automatically thinks of Accles and Pollock.



In the De Havilland Machine used by

SIR ALAN COBHAM

in his recent and famous London-Melbourne-London flight, all the tubing and tubular parts were of our manufacture.

What better demonstration of their suitability for important aircraft construction?



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meet every requirement in Aircraft Construction and as such are used by practically all the leading Aircraft Manufacturers.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS.

The Society of British Aircraft Constructors announce the election of the following officers for the year 1926-1927:—

Chairman, Mr. T. O. M. Sopwith, C.B.E. (H. G. Hawker Engineering Co. Ltd.).

Vice-Chairman (for Aircraft), Capt. P. D. Acland (Vickers Ltd.).

Vice-Chairman (for Engines), Mr. H. T. Vane, C.B.E. (D. Napier and Son Ltd.).

Hon. Treasurer, Sq. Cdr. J. Bird (Supermarine Aviation Works Ltd.).

THE ROYAL UNITED SERVICE INSTITUTION.

The programme of lectures to be delivered at the R.U.S.I., Whitehall, during the 1926-27 season, includes the following lectures of special interest to the R.A.F.:—

Wednesday, Nov. 24.—“Anti-Aircraft Defences, with Special Reference to the Territorial and County Organisations.” By Major-General E. B. Ashmore, C.B., C.M.G., M.V.O.

Wednesday, Dec. 2.—“The Royal Air Force Flight from Cairo to the Cape.” By Wing Cdr. C. W. H. Pulford, O.B.E., A.F.C., R.A.F.

Wednesday, Feb. 23.—“Air Co-operation with the Army.” By Wing Cdr. E. L. Gossage, D.S.O., M.C., R.A.F.

The lectures begin at 15.00 hours.

A CORRECTION.

With reference to the paragraph relating to the Royal Aero Club and the Seven Aero Club on page 556 of the issue of *THE AEROPLANE*, dated Oct. 27, for Westland “Widgeon” in the second and seventh lines read Westland “Wood-pigeon.”

The transposition of the names of the two excellent Westland aircraft by a mental inversion does not affect the argument. We are still waiting either for the appearance of an apology from the Royal Aero Club or the occurrence of a Court Martial in the Royal Air Force. The slur cast on the honour of the Air Force cannot be allowed to remain.

TO PHOTOGRAPHIC SURVEYORS.

The attention of those who are concerned with photographic survey work is directed to a meeting of the International Society of Photogrammetry which will take place in Berlin from Nov. 22 to Nov. 26. At this exhibition there will be on view a number of instruments, maps and photographs used in this system of photographic survey which is closely allied to air survey work.

The exhibition will take place on the premises of the Technical Academy at Charlottenburg, near Berlin. Those who wish to attend are invited to communicate with Herr Erwin Reibenschuh, Rauchstrasse 23, Berlin, W.10, Germany, who will be remembered as having visited this country some months ago in connection with photographic surveying.

The International Society of Photogrammetry was founded by Professor Dr. Dolezal before the War 1914-18, and was intended to unite persons and societies of all kinds interested in photogrammetric survey by the exchange of experience on a scientific basis. The war interrupted Dr. Dolezal's excellent plans, and the scheme has only recently been renewed.

The exhibition will demonstrate the progress of mapping photographically, both from the ground and from the air by a number of examples of such work from various countries.

AIR AFFAIRS IN PARLIAMENT.**THE DOUCHETT PARACHUTE.**

In the House of Commons on Oct. 26, in reply to a question by Viscount SANDON, the SECRETARY OF STATE FOR AIR said the new American invention of parachutes for the aeroplanes themselves had not been tested, but that a similar proposal had been carefully considered and rejected some time ago. While a parachute to sustain an individual was quite practicable, the weight and bulk of one to sustain a complete aircraft would be incompatible with present day performance, and, so far as the aircraft itself was concerned, it was considered to be better to make it safe to fly than to rely on extraneous aids of this nature.

METEOROLOGICAL FACILITIES IN THE EAST.

In the House of Commons on Oct. 26, in reply to a question by Viscount SANDON, the SECRETARY OF STATE FOR AIR said that he understood that Sir Alan Cobham's suggestions, as reported in the Press, had reference to the meteorological and other facilities which would be required for a regular air service between Calcutta and Singapore. Before such a service was instituted any recommendations made by Sir Alan Cobham, as a result of his experiences, would receive the fullest consideration from the authorities concerned.

[In this connection the following message from *The Daily Telegraph* correspondent in Calcutta, dated Oct. 27, is of interest:—

“As the result of Sir Alan Cobham's experiences, and with a view to the early inauguration of Indian air mails, the Indian Government is considering important developments in the direction of weather warnings in connection with air mails. It is intended that India shall undertake the cost and responsibility of providing information within the area represented by the triangle Karachi-Aden-Basra, where the meteorological network is at present so open that storm warnings are practically non-existent. Forecasting for airships from the centre Karachi will involve considerable expenditure, but this is considered a most urgent scheme in view of the frequency of the storms in these regions, which would easily spell destruction to unwarmed aircraft. A second scheme concerns a future air route between Calcutta and Singapore, while a third scheme is for broadcasting from the centres Quetta and Peshawar, for the benefit of the R.A.F. squadrons on the frontier, where aviation is an increasingly important arm of India's defences.”]

ANOTHER NON-STOP RECORD.

On Oct. 28, M. Coste and Capt. Rignot left Le Bourget on a Breguet XIX biplane (500 h.p. Hispano-Suiza engine) in an attempt to beat the World's Record for a non-stop flight in a straight line.

On Oct. 29 they landed at Jask, Persia, having covered a total distance of 5,425 kms (3,390 miles).

Their total flying time was 32 hours. They actually got beyond Jask in the hope of reaching Charbar, but returned to Jask owing to darkness.

The previous record was held by Lieut. Challe and Lieut. Weiser, who, in August, on a similar machine, flew from Paris to Bandar Abbas, a distance of 5,175 kms. (3,234 miles).

CIVIL AVIATION IN PERU.

The Peruvian Congress has allocated a sum of £45,000 in the 1927 Budget for the establishment of a seaplane service along the Hualaga and Pachitea Rivers in order to improve communication between Lima and Iquitos.

The organisation of the service will be arranged with the assistance of the United States Naval Mission. Lieut.-Commander H. B. Grow, U.S.N., of this Mission, is the commanding officer of the Peruvian Naval Air Service.

BY LIGHT AEROPLANE TO THE EAST.

Various papers have published paragraphs concerning a projected long-distance flight on two Moths by Mr. T. Neville Stack, chief instructor and aerodrome manager of the Lancashire Aero Club, and Mr. B. S. Leete, late R.A.F., who is a member of the Lancashire Club. It was the original intention of Messrs. Stack and Leete that nothing should be said about the flight until they had actually started, but there is so much gossip going about concerning the flight, that there can be no harm in stating that the intention of the two pilots is to get to “a warmer climate”—which presumably means reaching India if they can.

One does not know whether they intend to follow the Central European route to Constantinople and thence across Anatolia to Baghdad, or whether they will go by Malta to Tripoli.

Two Moths with Cirrus engines have been turned into single-seaters and equipped by the De Havilland Company with specially large tanks to give a non-stop flight of 8-8½ hours. One of these, to be flown by Mr. Stack, is G-EBMO, the King's Cup winner, otherwise known as “Sir Charles Wakefield's Bath,” owing to her white enamel finish. The other is G-EBKU, one of the De Havilland school machines, and in fact the second Moth to be built. Both have Cirrus Mk. II engines.

Somewhere about three years ago two young officers of the R.A.F. worked out a beautiful scheme to fly home from Iraq during their spell of leave on two Parnall Pixies, and had worked out all their plans even to the extent of having secured the machines. But they were stopped for political reasons, as at that time affairs with Turkey were strained, and the position might have become more difficult if a British officer had made a forced landing in Turkish territory. Owing to the improvement in the political situation it is now possible for British pilots to fly across Turkey in comparative safety. Consequently, given good luck with their engines, there seems no reason why Messrs. Stack and Leete should not fulfil their ambition to become junior Cobhams.

THE FLYING CLUBS.**The London Aeroplane Club.**

Report for week ending Oct. 31.

Total flying time 25 hrs. 30 mins. The weather conditions were responsible for three blank days.

The following members had instruction:—T. C. Sharwood, E. J. R. King, F. Clarkson, Miss Fletcher, G. Eady, M. P. Susman, H. Spooner, G. C. Bonner, J. S. Boulton, L. J. C. Mitchell, G. H. S. Mills, A. J. Richardson, J. J. Hofer, N. J. S. McLeod, E. A. Lingard, J. H. Simson, J. L. Gardner.

The following made solo flights:—Lady Bailey, N. J. Hulbert, R. Malcolm, Miss O'Brien, E. L. O. Baddeley, O. J. Tapper, L. J. C. Mitchell, E. E. Stammers, J. H. Saffery, N. Jones, A. R. Ogston, K. V. Wright, Major K. M. Beaumont, G. H. Craig, A. G. D. Alderson, W. Hay, S. O. Bradshaw, C. A. Rogers, E. S. Brough.

The following had joy-rides:—L. C. Davy, R. C. Presland, G. H. Craig, Miss Samuelson, Miss McKay, B. Waugh, C. G. Denton, Miss Gallien, R. E. Gifford, P. G. Lucas.

Total flying time for October was 183 hrs. 5 mins.

The Lancashire Aero Club.

Report for week ending Oct. 22.

Total time for week 25 hrs. 40 mins.

Dual with Messrs. Stack, Cantrill and Scholes:—Messrs. Twemlow 2 hrs. 20 mins., Blagden 2 hrs., Miss Brown 1 hr. 20 mins., Messrs. Crosthwaite 1 hr., Newton 1 hr., Leigh 55 mins., Hughes 50 mins., Wade 45 mins., Stern 40 mins., Benson 40 mins., Miss Emery 35 mins., Messrs. Shiers 40 mins., Goodyear 35 mins., Woods 25 mins., Gattrell 20 mins., Abdalla 20 mins., Cohen 20 mins., Harden 20 mins., Moore 20 mins., Anderson 15 mins., Hardy 15 mins., Leeming 15 mins., Fallon 15 mins., Costa 15 mins., Barker 15 mins., Barnes 15 mins., Adshad 10 mins.

Solos:—Messrs. Costa 2 hrs. 15 mins., Lacayo 40 mins., Leeming 20 mins., Williams 30 mins., Goodfellow 20 mins.

Joy-rides with Messrs. Goodfellow, Leeming and Lacayo 2 hrs. 40 mins. Test flights 1 hr. 35 mins.

It is now no longer a secret that a very sporting and ambitious light

'plane flight is to be attempted by Mr. T. N. Stack, a member and chief instructor of the Club, and Mr. Leete, another member who has represented the Club at several inter-club displays.

There is no need to go into details of the long distance flight which they are attempting on two D.H. Moths. It is sufficient to say that the Club was so impressed with the sporting nature of the effort, and its value to the light 'plane movement as a whole in the event of success, that they took the line of giving Mr. Stack special leave of absence from his duties at a few days' notice in order to enable him to carry out the flight.

We wish them both all possible good fortune and success and (to paraphrase the mothers of the American World-Fliers) we have "sent them away with a smile and will welcome them home with beers."

The Club has been exceedingly fortunate in obtaining at short notice as Mr. Stack's deputy the well-known pilot, Mr. H. A. Brown. After a distinguished record in the R.N.A.S. and R.A.F., Mr. Brown was the leading pilot of the Avro joy-ride company in the years immediately following the war. For the last five years he has been the chief instructor to the Spanish Royal Naval Air Service at Barcelona, and has a record of over 3,000 hours' flying. His first flight on a Moth was a delight to witness.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Oct. 31

Total flying time 15 hrs. 30 mins., all on LX.

LY is awaiting the completion of top overhaul of engine.

Dual 6 hrs. 5 mins Solo 9 hrs. 25 mins.

The following members had instruction with Mr. Parkinson:—Miss Leathart, Mr. C. E. Craig, Mr. C. E. Shaw, Mr. D. Matthews, Mr. R. Whitfield.

The following pilot members flew with passengers:—Lord Ossulston with the Earl of Tankerville, Mr. Matthews, Mr. Atkinson, and Mr. Turnbull. Mr. Forsyth Heppell with Mr. Wardill, Mr. H. Ellis, Mr. Stawart. Mr. R. N. Thompson with Miss Leathart, Mrs. Marcks, and Mr. Watts. (Passengers are always sure to go with Mr. Thompson when asked, for he is regarded as a safe and steady pilot who will not do tricks.) Mr. W. Baxter Ellis with Mrs. Ellis, Miss Nesbit, Mr. Douglas, and Mr. Nicholson. Mr. C. Thompson with Mr. Watts and Miss James. Dr. H. L. B. Dixon with Mr. Dixon, Mr. Whitfield, Mr. Henderson, and Mr. L. Wilkinson. Mr. F. H. Phillips with Mr. Annandale, and Mr. J. Bell.

Miss Leathart, Mr. H. Ellis and Mr. Matthews flew solo during the week, Miss Leathart being "launched" on Monday morning and Mr. Matthews in the afternoon.

On Monday, in spite of very bad weather and a considerable quantity of snow, Lord Ossulston travelled by car to the aerodrome from Chillingham Castle, some 40 miles away, with his father, the Earl of Tankerville, as passenger, and then flew with him back to Chillingham, landing there and returning to the aerodrome solo.

The Earl of Tankerville is 75 years of age, and made the flight very largely with the object of showing his confidence in flying, as he considers, as the Club has always felt, that such flights do much good.

Mr. Parkinson is taking a month's rest so the pilot members will now make up for lost time, as there will always be one machine available for them. It will be noted that they have started well this week. There was a good attendance on Saturday and Sunday.

Dr. Dixon has very kindly loaned a piano to the Club and now that flying finishes early, happy evenings are spent in the Club-house.

Another valuable aid to comfort is the gift of a portable stove by Lord Ossulston, for which certain members of the staff are very grateful.

The Midland Aero Club.

Report for week ending Oct. 31

Total flying time 8 hrs 30 mins.

The following had dual instruction:—A. B. Gibbons, H. Smith, C. Fellowes, C. L. Knox.

The following made solo flights:—E. J. Brighton, W. Swann, C. L. Knox, R. L. Jackson.

Mr. L. V. Mann was given a passenger flight.

Very little flying was possible on Sunday owing to bad weather.

The Hampshire Aeroplane Club.

Owing to the indisposition of the Publicity Secretary the usual report will not be forthcoming until next week.

Last Sunday, Oct. 24, G-EBOH was flown down to Emsworth by Mr. Musselwhite with Mr. Perfect as passenger in answer to Rear-Admiral Preston's kind invitation to lunch. After lunch a start was made for the Seven Sisters with the idea of meeting Sir Alan Cobham there. As far as one can tell G-EBOH was the only machine, other than Sir Alan's, which landed at Burling Gap.

The Sydney (N.S.W.) Flying Club.

Report for week ending Sept. 18.

Total flying time 39 hrs. 25 mins., of which 19 hrs. 25 mins. was dual instruction.

Total number of flights 112.

On Sept. 20 Mr. R. H. Mitchell completed his first solo flight. This makes nine pupils who have done their first solo flights in seven weeks' operation of the Club.

The Department of Civil Aviation recently asked for a return to include the next-of-kin of all pupils of the Club. The members of the Club were circularised and the following is one of the replies:—

"Dear Sir,—Simultaneously with achieving my first solo this morning I receive your very polite, jolly little note inquiring tenderly after my next-of-kin. Let us hope the coincidence is a good omen at least.

I presume the information is required in case I should faint, or swear, or do something naughty out at our new Mecca. Therefore I have pleasure in advising that my father can be found at the above address.

Roughly speaking—without referring to notes—I do not think I am married.

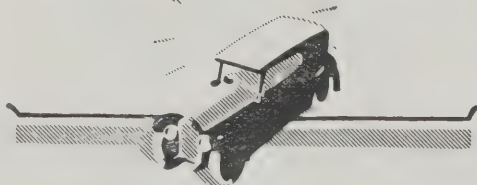
Please note particularly that I have a passion for daffodils, and like them best tied up with black and gold ribbon—my school colours.

As part of our business is in timber no doubt the firm can put you direct onto a cheap line in coffins.

Any other cheerful information desired will be gladly supplied.

Yours faithfully —,"

"As fresh as
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COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 12; Tuesday, 11; Wednesday, 13; Thursday, 11, Friday, 6; Saturday, 10; Sunday, 5

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 25, passengers 129, freight 13 tons.

AIR UNION:

Paris—London: Machines 17, passengers 15, freight 15 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 11, passengers 16, freight 2 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 12, passengers 8.

PRIVATE:

Machines 3, passengers 7.

Total number of trips by British Machines, 28, carrying 136 passengers. Foreign Machines, 40, carrying 39 passengers.

Comparative Figures:

Week ending Oct. 31:

Machines, 68; Passengers, 175; Crews, 85; Total personnel, 260.

Corresponding week, 1925:

Machines, 83; Passengers, 213; Crews, 95; Total personnel, 308.

Corresponding week, 1924:

Machines, 82; Passengers, 346; Crews, 102; Total personnel, 448.

Corresponding week, 1923:

Machines, 64; Passengers, 142; Crews, 95; Total personnel, 237.

Corresponding week, 1922:

Machines, 52; Passengers, 210; Crews, 78; Total personnel, 288.

Corresponding week, 1921:

Machines, 43; Passengers, 112; Crews, 59; Total personnel, 171.

Corresponding week, 1920:

Machines, 64; Passengers, 128; Crews, 85; Total personnel, 213.

Croydon Notes.

Now that the Argosies are flying so well and efficiently and with such reliability, rumour says that they are permitted to take the direct route from London to Paris. The yarn says that instead of crossing from Folkestone to Boulogne or Dungeness to Berck they now leave the English coast at St. Leonards and make a landfall at Criel, which is a few miles North-east of Dieppe.

The truth, as obtained from reliable sources, is that they leave the English coast at about Rye and make the French coast about Paris-Plage. One imagines that pilots who try to save time by taking the rumoured route are likely to have their tails twisted by the Management. After the recent and regrettable incident, the firm is not likely to want any more machines in the Channel, and there is always a possibility that one engine of three (or a dozen) may stop in a way which enforces an immediate descent.

But anyhow, the average time for the complete journey is now 2½ hrs. instead of 2½ or 3 hrs., as it has been in the past.

A comparison of what can be done in the same time is interesting. While the Argosy is flying to Paris a pedestrian could walk two-thirds of the distance from the Royal Aero Club to Croydon Aerodrome, a motorist could drive from London to St. Leonards.

"The Lowenstein Navy," with Lt.-Col. Minchin as Commodore and Mr. Leslie Hamilton as First Mate, arrived in England last week. It is understood that Melton Mowbray is to be the headquarters of the fleet during the Winter.

There is at present much speculation as to whether or not M. Lowenstein will take a serious interest in commercial aviation. It is believed that with the money at his command he could finance an unsubsidised air line which might be a serious competitor for Imperial Airways Ltd. On the other hand, it might lay the foundations of a further source of wealth for M. Lowenstein in the next ten years. [And then again it might not.—ED.]

An air line operated with the type of Junkers monoplane now employed by Deutsche Lufthansa, driven with Nimbus engines instead of B.M.W.s, might be a paying proposition at once.

One really wonders why Lufthansa do not replace their B.M.W.s with Nimbus engines. The Nimbus develops nearly 100 h.p. more than the B.M.W., it is several pounds lighter, and it is cheaper to run. Also the Nimbus has got over its teething troubles.

It is rumoured at Croydon that Mr. Fokker has decided to offer to K.L.M. a twin-engined machine which can fly level with a full load on one engine. It is stated that K.L.M. would use this in preference to a three-engined machine if it proved to be satisfactory. Presumably K.L.M. would require the machine to fly with 12 or 14 passengers with one Jupiter VI.

A.D.C. Aircraft Ltd. are beginning to be really busy again. Plenty of engine work is going on in the sheds and there are some comfortable orders for aircraft coming through. Altogether things in that quarter seem to be looking up. Everyone will be glad of this because A.D.C. workmanship has always been of the highest.

What wonderful opportunities the firm have got if they will use them! They have established a name all over the world, they have got a wonderfully-equipped factory at Croydon. They have a willing and capable staff who are all delightful to deal with and are all notable for giving the squarest possible deal.—G. D.

THE AIR MINISTRY AND PHOTOGRAPHIC SURVEYS.

The Secretary of State for Air, realising the importance of air survey in relation to Empire development, has arranged for an exhibition of the methods employed in producing photographic surveys to be held during this present week at Gwydyr House, Whitehall, where the political and civil side of the Air Ministry is situated. This exhibit, which is in effect the same as that which was shown but not seen at Croydon on Oct. 23, has been arranged by the Aircraft Operating Company Ltd. and the Air Survey Company Ltd. in co-operation. Sir Samuel Hoare has put Room 48, Gwydyr House, at the disposal of these firms.

The exhibit consists of the apparatus used in aerial photography, a number of photographs taken by the firms, and a full exposition of the various methods by which maps are produced from photographs.

The Aircraft Operating Co. Ltd. exhibit an extremely interesting map of Central London, made up of very much enlarged photographs, so that the whole map is on a scale of about twenty-five and a-quarter inches to the mile. There is also a photographic map of a London suburb, such as should be of great use to estate agents desiring to show prospective householders the exact location of the lots which they are thinking of buying.

The Air Survey Company Ltd. show some excellent examples of their work in the Far East. And the map showing the areas which they have already surveyed is convincing evidence of the further possibilities of such work.

The various Dominion Ministers who have been taking part in the Imperial Conference have paid special visits of inspection to the exhibit and it is now open to the general public. Any reader of THE AEROPLANE who wishes to acquire a better understanding of the possibilities of air survey should certainly go and see this exhibition, more especially pilots who hope to get into this particular branch of commercial aviation. Gwydyr House is on the left-hand side of Whitehall, just beyond the War Office, going down towards Westminster, and is the building adjoining the Royal United Service Institute.

THE DYMCHURCH ACCIDENT.

The Air Ministry announces that as a result of the investigation into the circumstances of the accident to the French Aircraft F-AIEB, which occurred near Dymchurch, on Aug. 18 last, the Inspector of Accidents has arrived at the following conclusions:—

(1) That the aircraft came into collision with the roof of a farm building when the pilot was manoeuvring to land.

(2) That the collision was due to an error of judgment on the part of the pilot.

(3) That no defect developed in the aircraft or any of the engines during the flight and that the pilot was attempting to land on account of the bad weather conditions which prevailed at the time.

THE SPENCER-WILLOWS BALLOON ACCIDENT.

C. G. Spencer and Sons Ltd., the balloon manufacturers, were summoned at the Bedford Police Court on Nov. 1, under the Air Navigation Regulations, for having allowed a captive balloon to be flown at Kempston on Aug. 3 without the special permission of the Secretary of State for Air, and without a Certificate of Airworthiness for the balloon.

The summons related to the accident at the Kempston flower show which led to the death of Capt. E. T. Willows and four passengers.

Mr. Maurice Healy, K.C., appeared for the Director of Public Prosecutions and Mr. J. D. Cassels, K.C., and Mr. Walter Warren for Spencer and Sons Ltd.

For the prosecution it was stated under Air Navigation Regulations no aircraft might be flown without a Certificate of Airworthiness, and no captive balloon might be flown without special permission from the Secretary of State for Air. On the day of the accident the balloon in question had no certificate; and no permit to fly a captive balloon had been granted.

Major J. P. C. Cooper, Inspector of Accidents, The Air Ministry, said that the balloon had been registered as a free balloon and not as a captive balloon. This was important, as the stresses on a captive balloon might greatly exceed those on a free balloon. A temporary Certificate of Airworthiness had been issued for the balloon as a free balloon on July 28, 1925, which was valid for three months only, and he could find no trace of a subsequent certificate. There was no record of a subsequent certificate being issued. In cross-examination the witness admitted that the temporary certificate did not specify that it related to a free balloon, and that it bore the words, "Pending the issue of a Certificate of Airworthiness proper, this certificate will stand in lieu."

Mr. F. W. Verrey, of the Air Ministry, stated that a regular certi-

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ificate was not issued because photographs of the balloon which had to be attached were not available. The full fee for a regular certificate had been paid, but no action had been taken to issue such a certificate. In answer to questions, the witness said that the Ministry had granted a permit to Spencer and Sons Ltd. to fly another balloon at Catford in July, knowing that the firm had no current Certificate of Airworthiness.

For the defence, Mr. Cassels said that no one would suggest that the absence of a certificate was in any sense the cause of the accident, and that the Ministry were at least in part to blame for this absence as they had failed to take steps to follow up the issue of the temporary certificate.

The Magistrates convicted on both charges and imposed fines—£100 for failure to secure a permit to fly and of £50 for failure to hold a Certificate of Airworthiness. Costs were fixed at 30 guineas.

Notice of appeal to Quarter Sessions was given on behalf of Spencer and Sons Ltd

PERSONAL NOTICES.

MARRIAGES.

BILNEY-PERREN.—On Oct. 23, at the Cathedral, Bombay, Flt. Lt. Christopher N. H. Bilney, R.A.F., second son of Mr. and Mrs. Bilney, Newbury, Berks, to Nellie G. Perren, elder daughter of the late Mr. T. Perren and Mrs. Perren, Box, Wilts.

CASTER-ROBINSON.—On Oct. 28, at St. Leonard's, Streatham, William S. Caster, M.C., R.A.F., son of the late George Caster and Mrs. Caster, of Peterborough, to Marjorie N., daughter of the late Charles E. Robinson, of Hove, and Mrs. Robinson, Maplestead Road, S.W.2.

RUSSELL-BOVILL.—On Oct. 30, at St. Garmon's Church, Capel Garmon, Flt. Lt. Herbert Bainbridge Russell, A.F.C., only surviving son of the late Herbert Russell and Mrs. Russell, of 24, Argyll Mansions, to Margaret Ann, youngest daughter of Mr. and Mrs. George Bovill, of Rhydycreua, Bettws-y-Coed.

FORTHCOMING MARRIAGE.

GREEN-MACALISTER.—A marriage has been arranged, and will take place quietly in London, between Donald Salisbury Green, R.A.F., eldest son of Mr. and Mrs. Owen Green, of Harpenden, and Nancy Whiter, daughter of Mr. and Mrs. Macalister, of Worthing and St. Albans.

BIRTHS.

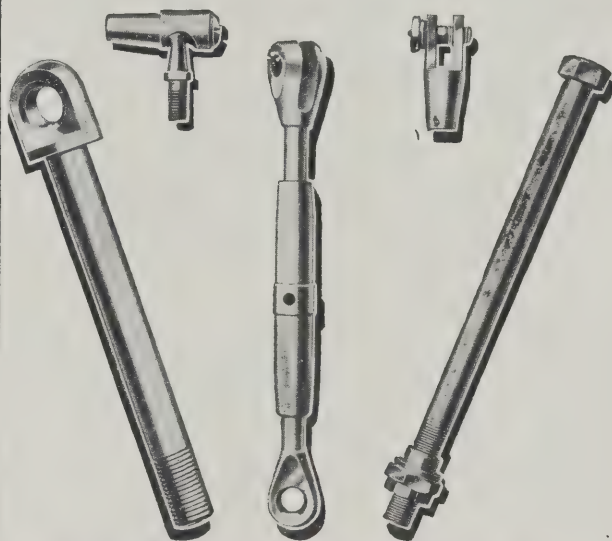
SPIERS.—On Oct. 2, at Lincoln, to Nellie (née Elvin), wife of Flg. Off. C. D. Spiers, R.A.F.—a son.

THORNTON.—On Oct. 23, at Quetta, India, the wife of Flt. Lt. Edward Thornton, R.A.F.—a son.

WILSON.—On Oct. 25, at Wedgwood, Manor Way, Ruislip, to Frances Marian (née Broughton), wife of Flg. Off. R. F. Wilson, R.A.F.—a daughter.

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THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
R. G. Gray

Vol. XXXI. No. 19.

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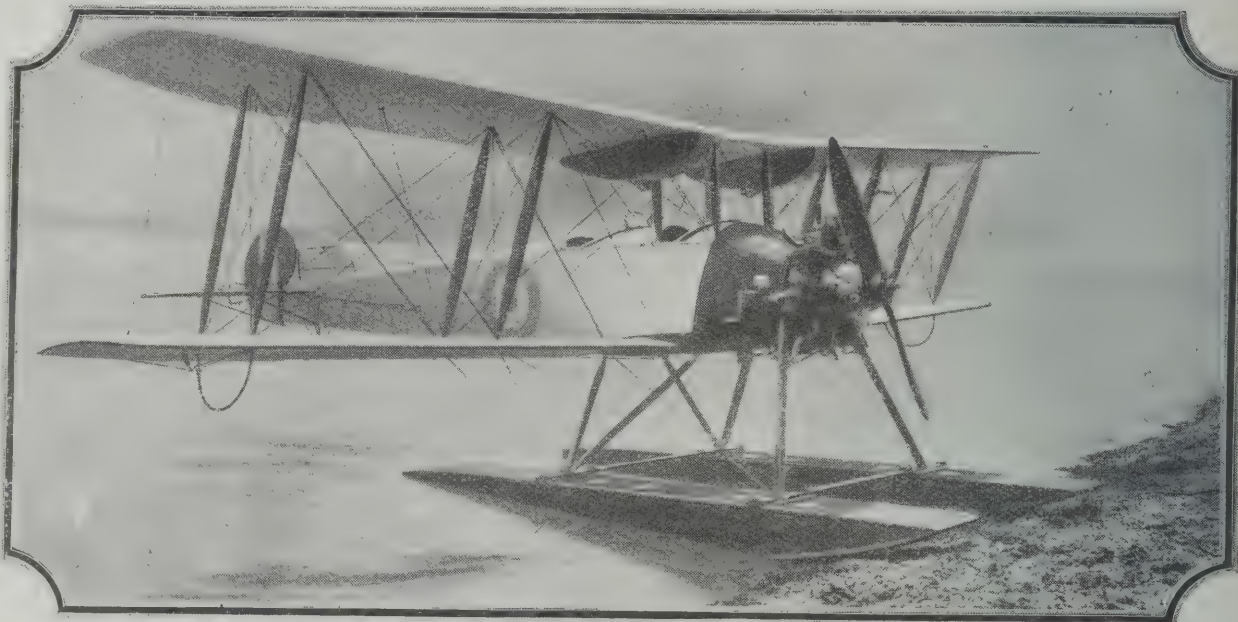
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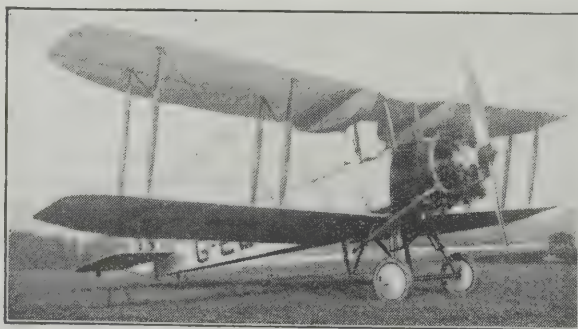
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1926.

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ON AVIATION AND THE EMPIRE.—II.

About half of last week's leading article was cut off in the flower of its youth by what is journalistically called exigencies of space.

Things keep on happening at such an astonishing pace in aviation in these days that although one may have planned to put certain matter into THE AEROPLANE on a certain date, other things happen which displace them. And, as one is faced every week with the appalling problem of how to get forty pages of reading matter into fourteen pages, or less, the result is that week by week a much greater amount of interesting reading matter is squeezed out of THE AEROPLANE than ever gets into it.

The number of reading matter pages which one can afford to publish is dependant absolutely on the number of advertisement pages procurable each week. And until the Aircraft Industry is in such a flourishing condition that it can afford to advertise more copiously, the number of reading matter pages cannot be increased.

The Aircraft Industry has certainly supported THE AEROPLANE to the best of its ability ever since the paper began. So our only hope of being able to publish all the interesting things which are crying out to be published is to make the British Empire so air-minded that it will produce a boom in the Aircraft Industry. Then the Aircraft Industry will advertise more largely, and we shall be able to afford more pages of reading matter.

Of all the ways by which the people of the Empire can be impressed with the usefulness of aircraft none is more likely to be immediately successful than are air surveying and co-operative flying, either by private owners or by clubs. That is why one is devoting so much space to these subjects just at present.

The development of air lines is all very well in its way. And air lines are as necessary to our Empire as were strategic railways to Germany before 1914. But pushing a great Imperial air line straight through from one end of the Empire to the other, is rather like building a main railway line without any branches. It is not until the branches develop that

the main line can be used to the greatest advantage. It is very well worth while to build that main line, because it links up the chief towns through which its runs, and provides rapid transport between them. But it is only when the branch lines are built that the main line can be worked to its full traffic capacity.

The operating of air surveys in all the out-of-the-way parts of the Empire, where at present hardly any means of communication exist, can do more to impress people with the usefulness of air transport than could ever be done by running air transport in straight competition with existing railways and steamboat lines.

THREE BASIC IDEAS.

On Thursday last, Nov. 4, the Air Survey Company Ltd. gave a lunch at the Holborn Restaurant to a number of people, including Press representatives, who are, or who ought to be, interested in air surveys.

Before proceeding to deal with what was said after the lunch, one proposes to give readers of this paper a preliminary idea of the work of the Air Survey Company Ltd. merely by publishing that portion of last week's article which had to be held over till now. But before doing so one would like one's readers to approach the subject with three ideas in mind which one acquired at that party.

On these three ideas the whole case for Civil Aviation can be built up. They are as follows:—

Sir Alan Cobham laid down the axiom that *it does not matter whether an air line pays as a transport proposition or not so long as it benefits the country in which it operates.*

Colonel Edwards, of the Department of Civil Aviation, stated the fact that *vastly more lives have been saved by the transport of doctors to sick people or by the transport of sick people to proper medical attention than have ever been lost through people being killed in accidents to civil aircraft.*

Mr. Oswald Short set forth as a philosophy "*Old men dream dreams and young men see visions,*" and present success comes between the two."



AN AIR STATION IN SARAWAK.—An aerial view of the Port of Sibn. In the right-hand bottom corner is seen the seaplane shed which housed the Air Survey Co.'s D.H.9. The small building in the extreme corner is the petrol store. The raised pathways and road should be noted. At certain seasons all the ground beside the river is under a couple of feet of water, as shown in the companion picture on the next page.

With those ideas in mind let us now proceed to the affairs of Air Surveying in West and East.

[Continued from "The Aeroplane" of Nov. 3.]

REAL DEVELOPMENT.

Actually the real development of Commercial Aviation in the British Dominions is being done by commercial companies, mostly without any help from the Government at all,—except for the subsidising of the three air-mail lines in Australia and the establishment there with Government assistance of light aeroplane clubs on the same lines as those in this country.

After so much talk about official assistance to aviation, readers of this paper will certainly be interested to know something of the work which is being done by two of these very independent concerns, one in Canada and one in the Far East.

The Canadian concern to which one refers is the Northern Syndicate Ltd., which is notable because it has been operating in the least known parts of Canada, to such an extent that the older-established Laurentide and Fairchild firms seem to be working almost in the suburbs of the greater Canadian cities, though in fact the work of their pilots is probably just as arduous and just as dangerous as is that of the Northern Syndicate.

The Northern Syndicate is composed of a group of men of Western origin, who some time ago bought a Napier-engined Vickers Viking from the Laurentide Air Services to carry mining engineers into the far reaches of the unsurveyed section of the North-West territories. The prime object of the expedition was to prospect the area for mineral deposits supposed to be located there.

One has no knowledge of the success or otherwise of the expedition from a mineralogical point of view. But the flying side of it was, as Mr. C. S. Caldwell, the pilot and chief engineer of the show, expressed it, "a roaring success." The expedition had to make their own maps, make caches of "gas and grub" as it went along, and carry a party of five in "Bouncing Bruno," as they nicknamed their Viking. Five full-grown men, complete with tents, sleeping bags, food and cooking paraphernalia is no joke for a single-engined flying-boat even with a 450 h.p. Napier Lion.

The Viking was originally an amphibian. But the land undercarriage was removed to reduce weight. In fact, as Mr. Caldwell says, it was only an encumbrance in that section of the country where there is no level land, and water is so plentiful.

The expedition's source of supplies was Fort Fitzgerald, Alberta, and their work was over the Barren Lands around the East and North of the great Slave Lake, known locally as "the blind spot of Canada." The Viking did some seventy

hours' flying and the expedition had no trouble whatever, largely owing to two facts, a good machine and a wonderful mechanic, Mr. I. Vachon, also formerly of the Laurentide Company.

Altogether that Viking has done five seasons' work and about 600 hours' flying. And, after finishing the job in July, the Viking was flown to the Royal Canadian Air Force Station at High River, where it was stored for the Winter.

Mr. Caldwell describes the barren lands as being barren of everything except mosquitoes, water and caribou, of which there are too many for comfort. Despite the fact that they were flying over unmapped country, they succeeded in returning, without much difficulty, to the various caches of petrol and food.

There you have not only a thoroughly sporting effort, but an example of the real commercial use of aircraft, without any sort of Government assistance or official recognition. And to prevent any misunderstanding, one may add that Mr. Caldwell is not one of those who has ever complained of lack of official help.

FRIENDS IN THE FAR EAST.

The work of the Far Eastern Survey people is quite as interesting, though done under perhaps less adventurous and more comfortable conditions.

The other day one had a talk with two of one's earliest friends in Aviation, dating from 1910, when they were boys together with the Avro people at Brooklands, Mr. Ronald Kemp, the chief of the Air Survey Co. Ltd., and Mr. Fred Raynham, who has just come home after doing the Sarawak survey during Mr. Kemp's absence in England. The accompanying photographs illustrate very well the conditions under which their work was done.

Two D.H.9s were used. The first of them was one of the "Gift Hundred" aeroplanes presented by the Air Ministry to the Indian Government just after the War 1914-18. That was the machine which did the Irrawaddy survey, in which Mr. Kemp made name and fame as an aerial surveyor. The other was bought from the Aircraft Disposal Company at a later date. Both are fitted with Siddeley Puma engines which were also originally gift engines from the Indian Government's still unused stock. The floats were built by Short Brothers of Rochester, one pair of wood and one pair of duralumin, and they are fitted to either machine alternately, as occasion demanded.

Most of the work was done at Sibu on the Egan River, an outward branch of the Rejang, which is only $2\frac{1}{2}$ degrees North of the Equator. Mr. Raynham describes the climate as being hot and moist but pleasant.

One of the accompanying photographs shows the river port of Sibu under normal conditions and the other shows



THE AIR PORT OF SIBU.—A "close-up" of the seaplane shed which is shown in the companion picture. This was taken during one of the flood periods. The raised path is seen on the left. The doors on the right-hand section of the shed were copied (at a respectful distance) by Mr. Raynham from the doors on the original sheds at Brooklands in 1911, which doors were suspended on hooks from the front edge of the roof. The machine is a standard D.H.9 (Puma engine), on floats built by Short Bros.

The Navy of September, 1926, says—

“IN the last seven months Napier engines have flown from Cairo to Cape Town, and back to England ; from Plymouth to Alexandria and back ; from Spain to Buenos Aires ; covering, on these flights, nearly 100,000 engine miles. Such a record of consistent reliability in long distance flights has never been approached by any other engine, and it is gratifying to see how the Napier has so fully proved to the world the reliability of British aero engines.”

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



A FAR-EASTERN AIRCRAFT GARAGE.—The shed at Jesselton, Sarawak, where Mr. Raynham left the Air Survey Co.'s D.H.9 when returning to England. The picture gives a good idea of the country in that area.

the seaplane shed as it is when the river rises in the rainy season. It reminds one rather of the late Dan Leno's famous song about his house, which he described as having a very pretty garden with a river at the bottom of it,—about two months in the year, the rest of the year the garden being at the bottom of the river.

The two machines were originally shipped to Miri where they were used to do a survey for the Sarawak Oilfields Company. Thence they were flown to Sibu, where some 2,300 square miles of the Rejang Delta were surveyed for the Sarawak Government.

Thence the A.D.C. machine with the metal floats was flown by way of the Dutch oil islands to Singapore by Flg. Off. Neville Vincent, D.F.C., who, during a spell of half-pay, is flying for the Air Survey Company. On that machine he recently flew the first air mail in the Federated Malay States from Singapore to Penang.

Mr. Raynham then flew the other machine up to Jesselton, in the extreme North of the island, to consult with the British North Borneo Company about doing some survey work there. As the pictures show, before returning to England he built a garage over the machine, where it is to remain till Mr. Vincent goes to fetch it.

Mrs. Raynham was with her husband during his work in Sarawak and accompanied him on the flight to Jesselton. So she must be the only woman who has ever made a considerable journey by air in the Far East. The fact that she was able to live there for so long and looked so well on her return, shows that the life, though primitive, is at any rate healthy.

THE DECLINE OF AN INDUSTRY.

One gathered from Mr. Raynham that the Bornean native is rather a pleasant person. The native industry of head-hunting has declined into a mere convention. The Dyak no longer craves for the heads of white people, as he has found that the gratifying of such craving is unhealthy, thanks to the white man's superior fighting power and armament. And even serious tribal feuds or family vendettas are uncommon.

It is still the proper thing for a young Bornean to acquire

a head or two, chiefly because the ladies of Borneo have a low opinion of the manhood of any male who has not taken one. But the modern Bornean seems to be rather a degenerate, at any rate from the point of view of his ancestors, for he is now content merely to decapitate some aged tramp or some old woman drawing water at a river instead of putting up a fight with a rival.

Still, as Mr. Raynham points out, he does it entirely without malice and merely in obedience to convention, and apart from that habit is not at all a bad fellow.

MONSOON FLYING.

Mr. Kemp was very interesting on the subject of flying in monsoon weather.

Years ago when Mr. Norman Macmillan endeavoured to transport Major Blake and Mr. Malins round the World he struck the worst kind of Indian monsoon weather and he told one afterwards that though it was impossible to fly through a real heavy monsoon storm, it was sometimes possible to get round it, and it was always possible to make progress in between the heavy bursts of rain.

Much about the same time a flying officer from India said that he had tried on several occasions to get over the top of the monsoon clouds and that though he had gone up to something like 15,000 feet, he had never succeeded in getting above them.

Also it will be remembered that in the course of his journey back from Australia Mr. Alan Cobham was held up at Point Victoria, in the Federated Malay States, for some three days because of monsoon rain.

Mr. Kemp, who has certainly had more experience of the worst monsoon weather than any other aviator, told one that South of Singapore the monsoon weather is never very bad and that the worst of it is met along the coastline of the Federated Malay States from Singapore to Burma.

In his opinion it would be possible to run an air line, provided that it had properly organised landing places and reliable weather reports, with 85 per cent. efficiency during the worst monsoon weather through that worst area. Most of the flights during that period might be interrupted temporarily. But by coming down at the right place and letting



A FAR-EASTERN AIRCRAFT GARAGE.—A "close-up" of the shed at Jesselton. The D.H.9 was hauled ashore and the shed was built over and round it. The projecting part covers the fuselage and tail, with a special little roof for fin and rudder.

The advertisement is framed by two vertical decorative borders. At the top, a stylized sun with wavy rays is depicted. Below it, the word "FAIREY" is written in a large, bold, sans-serif font, arched over a banner that contains the word "AIRCRAFT" in a similar font. In the center, a detailed illustration shows a large naval ship, possibly a fleet oiler, with a small biplane flying above its deck. The ship is shown from a side profile, sailing on wavy lines representing the sea. Below the ship, the text "THE FAIREY AVIATION COMPANY LTD" is written in a bold, sans-serif font, followed by "HAYES" and "MIDDLESEX" on separate lines. At the bottom center, the letters "M.C.M." are printed.

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HAYES . . . MIDDLESEX

M.C.M.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

the storms pass before trying to go on it would be possible to get through almost always.

He said that there are two periods of monsoon weather in the year, each lasting about three months, but that only one of them would affect the running of an air line so seriously as to reduce its efficiency to 85 per cent. And he believed that during six months of the year, barring mechanical reasons for stoppage, an air line could operate with 100 per cent. efficiency, like those in Australia.

Those who are interested in running the projected air line from India to Australia should be interested in these statements. And before anybody starts seriously to organise anything of the kind they will do very well to consult Mr. Kemp on the subject, not only as concerns the weather, but as to the proper places at which to organise landing stations and meteorological stations.

THE HUMOUR OF THE AVIATOR.

The spirit in which these independent expeditions are run is well indicated by a purely imaginary description of the flight from Sibu to Singapore, written by a member of the party in imitation of the modern method of reporting Great World Flights. The sheer lunacy of it deserves space, even in so serious a journal as *THE AEROPLANE*. It reads as follows:—

The exclusive little crowd had already gathered to wish me God speed and were standing round my long, lithe, aerial monster. Built secretly during the War and fitted with specially designed floats, this gleaming product of the designer's brain seemed eager to mop up continents.

Lying there in the gentle morning mists and tentatively tugging at her moorings she seemed to sense my approach. A hush descended on the group as I advanced. Gad! the pride. These men, hardened by years under the pitiless sun, weather-beaten pioneers who had knocked the bark off the country, they had come in all humility of spirit to wish me luck on my terrific undertaking. I would not disappoint them. I vowed it. I, Baron Baraibech, Earl of El Ghasas.

A few handshakes and murmured words of encouragement and I was in my seat, strapped, to prevent me falling should I faint under the great strains soon to be imposed upon me. Good old Sarawak! At the thought of leaving a tear dimmed my eye. This would not do. El Ghasas must never weaken. I brushed it aside and resolutely put the switches to contact. Luckily the mechanic turning the propeller saw the action and an accident was averted.

At a word the engine roared into life and I was tearing over the water. I glanced rapidly round my instruments. The quivering pointers told me that I was ready to leave the water, and with one gigantic heave on the controls I was rushing through the air.

Down the Rejang River, Benatang, Siriki flashing past, I was approaching the open sea where I had a left-hand turn to negotiate. Foolishly I flung the machine on a wing tip in a vertical turn without throttling back the roaring motor. The terrific reaction to the centripetal acceleration almost deprived me of consciousness. With an effort I straightened up and headed for Kuching, passed it and saw Pontianak, where I landed.

So great was the welcoming crowd that I donned my diving suit and walked ashore under water to escape their congratulations. After riding round the town for a few hours on a push-bike I regained my

aeroplane via the back entrance of a superannuated wind clipper without being observed by the populace. A swift scurry down the river and I was heading for the open sea.

Before I had gained sufficient height a giant jelly-fish half rose from the water and snapped its wicked-looking jaws at me. The swift turn to avoid it registered five Gs on my G-indicator.

The mist had hardly cleared from my eyes when I realised with horror that I was being pursued by a monster flying animal from *The Lost World*. A quick glance showed me that it was probably developing two hundred and thirty on the brake. With the calmness of one awaiting the answer on a matter of life and death I threw in my brake indicator, and as the needle shrieked up to its fateful number I crouched lower over the levers. Heaven be praised! My dial registered two hundred and thirty-one. I, El Ghasas, had 3,300 ft. lbs. per minute up my sleeve.

I turned and snapped my fingers at the ghoully thing following. But shame overtook me. How could I have doubted my . . . petrol (only £5), my . . . plugs (all right, £4 then), and my never faltering . . . engine, which has to be switched off nearly always before it stops. Hell! Was that Singapore? I landed. I, Baron Baraibech, Earl of El Ghasas, had triumphed.

These then are the people who are doing the real work of developing commercial aviation, and they are doing it without newspaper boosting, without Government subsidy and without all the hot air of official conferences.

Very soon after the Armistice, when the question of subsidising Civil Aviation was being discussed, Mr. Winston Churchill, who was then Secretary of State for War and Air combined, said bluntly 'Civil Aviation must fly by itself.'

One said then and one says again now that Civil Aviation will never be any financial good to anybody till it can fly by itself.

Civilian aircraft may do Government work, either here or in the British Dominions, and be paid by the various Governments for doing it. And subsidised aviation may lay the ground-work or blaze the trail for real commercial aviation. But the kind of Civil Aviation which is going to make the people of the Empire air-minded is the Civil Aviation that does fly by itself.

An Historic Party.

We may now turn to the matter of that lunch party given by the Air Survey Co. Ltd. on November 4. The Chair was taken by Colonel C. H. D. Ryder, C.B., C.I.E., D.S.O., who until a few years ago was chief of the Indian Government Survey and is now Chairman of the Air Survey Co. Ltd. The party, one may remark, was excellently organised by Mr. C. Aston Dodds, the Secretary of the firm.

COLONEL RYDER said that the Man in the Street had awakened to the possibilities of aviation. He submitted that, with the exception of the Canadian Government, the Air Survey Co. had done more than anyone to popularise air survey work. But much remained to be done.

We might get better machines and even more skilful pilots, but we must educate the public to the uses of aircraft. He claimed to speak with some authority on the matter of surveying because he had been a surveyor and an explorer all his life, and he could assure people that air surveying had come to stay.

Much as he disliked slogans, they had adopted the slogan "Half the cost in a quarter of the time." There were vast tracts of land which needed mapping. No country could be developed without maps.

He referred to a letter from a friend in Canada saying that a larger programme than ever in aerial photography had been arranged. Surveyors, foresters, water power engineers, geologists and in fact almost every branch of engineering interested in the development of the country were now backing aerial surveys as the fastest and best method of getting the information on which their work depended. And the outlook was brighter than it had ever been.

Air survey and air transport were inseparable. Together they would be secure. If Governments and companies holding large concessions would give work to the air survey companies the expansion in trade and commerce by means of the air would mark an epoch in our history.

He congratulated and thanked the staff of the Company for the splendid work they had done. And he announced that Mr. F. P. Raynham, who had just completed two large surveys in Borneo, had joined the Board of the Company. Meanwhile Captain John Durward who had been lent by the R.A.F. to the Air Survey Company in Burma, had now left the R.A.F. and joined the firm and was carrying on the good work in the East.

THE WORK DONE.

MR. RONALD KEMP, the Managing Director of the firm, said that the progress of air survey was not slow but that it might be more readily adopted by those who wanted surveys done. The Irrawaddy Delta survey of 1,400 square miles showed a saving of £18,000 and three or four years.

The Air Survey Co. was formed in 1924 to take over the survey of the South Tenasserim forests. The country had been previously mapped, so what was required was a reconnaissance of the forests by forest officials and a photographic check of the existing maps. The Government of Burma was well satisfied.

The area covered was approximately 15,000 square miles and the survey took only three months flying from four different bases along the Tenasserim coast. It showed up changes in types of forest so that it was easier to see where the boundaries between the types should be placed.

It also showed the movements of nomadic cultivators who move on to new ground each season, burning and clearing the jungle as they go. In this way the tremendous extent of forest destruction could be estimated and steps taken to get it under control.

In the same year the Burma Oilfields at Yenangyaung were photographed and printed on a scale of 24 inches to the mile.



THE FIRST AIR MAIL IN BORNEO.—Mr. Fred Raynham unloading his mail-bag on arriving at Sibu, Sarawak, from Kuching.



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In the Spring of 1925 work in Burma ceased and a complete survey party went to Borneo, where they surveyed 1,400 square miles of the Baram district in seven months in abominable photographic weather. This was a real shock to them after Burma where in the fine season a similar survey could have been done in two or three months.

The weather was good enough for flying, but low clouds interrupted the main photographic strips and complicated the compilation of the maps.

That contract taught them much, with the result that on the next survey, some 2,300 square miles in the Rejang district of Sarawak, under Mr. Raynham's charge, he and Mr. Andrews devised a scheme which simplified the work and at the same time overcame the cloud difficulties. The result was very gratifying indeed.

At present they were engaged in the Federated Malay States on the survey of mangrove forests on the West coast and a small area of topographical survey up-country, in addition to one or two smaller contracts for engineers and others. Flg. Off. Durward was now in charge, with Flg. Off. Neville Vincent as pilot.

The next move would be to Bengal where they would make their first start on air survey in India. The different purposes of these surveys might be of interest.

The Irrawaddy Delta survey was in the first instance for forest purposes, but the Survey Department of India saw the opportunity and sent Major Lewis, who was there that day, to compile a 3-inch to the mile topographical map of the area from photographs. Mosaics enabled the Burma Forests Department to make stock maps of their reserves. This showed that topographical maps and stock maps could be made from one set of photographs.

The city of Rangoon and its suburbs were surveyed for town planning purposes and map revision.

The Yenangyaung oilfields was a topographical survey.

The South Tenasserim forest survey was for preliminary stock mapping.

The Baram swamp in Sarawak was surveyed to assist geologists and for the estimation of concession areas.

The Rejang district embodied work for the forest and revenue departments as well as the topographical survey department of the Government of Sarawak.

The Federated Malay States surveys are for forest purposes, topographical survey and engineering.

In Bengal they were being employed by the Settlement and Revenue authorities.

Besides these, air survey could be of great use in river training; hydrographical surveys on rocky or shoal coasts; river prospecting; railroad and engineering surveys, including hydro-electric and water power; and lastly, all kinds of revenue surveys.

It must not be thought that air survey was going to put the ordinary surveyor out of business. On the contrary, he would have to employ air methods to increase the scope of his work to keep pace with the demand for development in new countries as well as to revise his work in countries already mapped.

The Air Survey Company were fortunate in having Colonel Ryder as Chairman. He had joined the firm on retiring from the post of Surveyor-General of India, to guide them in the respective use of air and ground methods.

SURVEYS AND AIR LINES.

The surveys to which he had just referred would give some idea of the spread of air surveys during the past years and the tremendous distance between those surveys would be noticed. Naturally a number of medium sized surveys widely apart such as those were more trouble to do, and less profitable, than if they had been all bunched together in one area.

The furthestmost of these surveys were separated by 3,000 miles, as the seaplane flies, and their seaplanes had now operated all the way from Rangoon to Singapore by way of the Dutch Islands up to Jesselton in British North Borneo. Such coastal flights, besides the regular survey flying, had taught them a great deal about the maintenance and handling of seaplanes in the Tropics. It had also given them ample opportunity to study commercial possibilities.

The result was they had decided that air survey and air transport could best be conducted together. Although the survey parties operating in the East were to some extent based on London, whence they must draw their supplies, they must also have some Eastern depot where overhauls could be done. This was a heavy charge on surveys. Therefore there would be a great saving if stores, workshops and all the facilities at a transport company's main base could be shared by survey and transport undertakings.

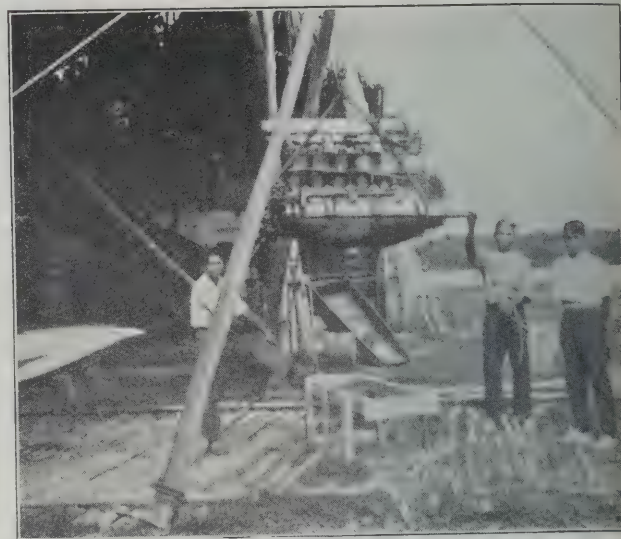
From their investigations on several routes they considered that the two branches of aviation could be made to pay. And their Company had decided to go ahead on one such air line.

Designs for an eight-seater seaplane were well in hand and they proposed to start with several of these machines. After eighteen months or two years, when probably a larger machine would be required, they estimated that local traffic and survey would find use for the older type so that it would not be necessary to scrap them.

The postal authorities abroad were eager for the development of mail services, as was shown by the interest they had taken in the flights by Mr. Raynham and Mr. Vincent, who carried respectively the first air mail from Borneo to Singapore, and from Singapore to Port Swettenham and Kuala Lumpur.

Speaking of impressing the Oriental, Mr. Kemp said that he took a Chinaman for a 90-mile flight to a place the distance of which he did not know. He enjoyed the flight, but was not much impressed until it took him two nights and a day to return by launch, though it only took him fifty minutes by air. The Chinaman could have sworn that they were not travelling very fast in the air.

Referring to Sir Samuel Hoare's recent remark that five million miles had been flown by British services for four fatal accidents and that a million miles had been flown in Australia for one fatal accident, he pointed out that in their small way his Company had operated three seaplanes for three years over coast lines and rivers without any ground organisation other than that improvised by their working parties, and they had covered 90,000 miles without any accident whatever. Consequently people in their part of the East now expected this kind of reliability from aircraft. Which he thought was a most hopeful sign for the future of commercial airways.



FIELD REPAIRS.—The Puma engine of the D.H.9 out for overhaul, at Siba, Sarawak.

MARKING AN EPOCH.

LIEUT.-COLONEL IVO EDWARDS, C.M.G., Deputy Director of Air Transport, said that this lunch was an epoch-marking event, for it was the first ever held to celebrate and testify to the growth made by air surveys. In colonising new countries there were obstacles to be overcome and maps were essential to prospectors and agriculturists and in the arranging of railway routes.

Ground surveyors had claimed that photographic surveys were not accurate. In this connection he said that a certain area on the South coast had recently been re-surveyed by land. A subsequent air survey showed that certain houses on the new maps were in the wrong position. The map-makers seemed to believe that the photographs were wrong. But it was discovered that the direction of a certain road had been changed and that the ground surveyors had marked in the new houses on the old road which had ceased to exist.

People talked about distances, but as a matter of fact distance actually meant time, and it was time alone that mattered. Colonisation was hindered by slow communication.

Air transport brought the amenities of civilisation to the back blocks. In certain parts of Australia life had become absolutely different since the air lines were opened. Women were now able to live in the new areas because they could get medical aid for their families.

He concluded by pointing out that vastly more lives had been saved by air transport than had been destroyed by air accidents, in Civil Aviation.

THE WORDS OF AN APOSTLE.

LIEUT.-COLONEL MOORE-BRABAZON, M.C., M.P., said that he felt like a ghost. He had been responsible for the production of the original designs of the air camera as now used, and eight years ago he had thought himself the World's greatest expert on aerial photography. Now he felt how profoundly ignorant he was on the subject.

He said that air survey needed all the encouragement it could get. We should not induce the Man in the Street to move except under immense pressure.

Recounting some of his experiences during the War he said that anybody would have thought that photographs of enemy trench-lines would have been welcomed by the General Staff when an attack was being planned. But the Staff would not accept photographs made by the R.F.C., and it was not until General Trenchard became a kind of commercial traveller in picture postcards that the General Staff began to see the use of them.

Later on, he himself was nearly shot at dawn for making maps out of R.F.C. photographs. Map making was not the R.F.C.'s job and it was not in the book.

Later again, when people began to understand how to interpret aerial photographs, the R.F.C. published a book on the subject, and there was another row because that was the business of the Intelligence Department G.H.Q. All of which showed the difficulty of introducing anything new.

He remarked that the Air Survey Company had got a good thing which they were trying to give to the Governments of the Empire and though they were not paying a dividend it was pleasant to see that they were not going into bankruptcy.

PROFITS AND ASSETS.

SIR ALAN COBHAM said that everybody had a wrong idea of air survey and air transport. Everybody expected to make money out of it. Whether they made money or not did not matter, so long as the countries in which they operated benefited by them.

There were plenty of railways in the World which never paid, as transport propositions, but they had made the countries through which they ran by opening them up. The Malay States, for example, had such a Budget surplus that they were able to give £2,000,000 to buy a cruiser for the British Navy, and yet their railway never paid.

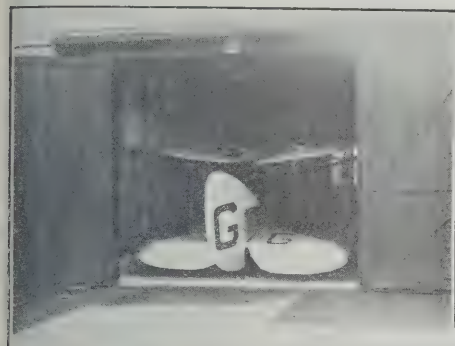
If some of our Overseas Dominions would put down air lines to increase the value of their countries the air lines would pay those countries ten times over. The Federated Malay States and Burma offered immense opportunities for the growing of rubber and so forth, but there were no maps and no communications and so the country was left undeveloped. [Incidentally, one reason why rubber estates are not opened up is that if the production of rubber increased the price would drop so much that rubber would not pay to produce.]

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"Flight"
Photos.



The illustrations show (1) The "Moth," wings folded, in an ordinary garage. (2) The Wings spread for flight—The Owner - Pilot can spread or fold the wings with ease in a minute or so. (3) Embarking for the journey—the "Moth" will fly over 250 miles without refuelling. (4) The start—you need no special clothing and you are efficiently protected from the weather. (5) Well away and showing a clean pair of heels to cars and trains.

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MAJOR-GENERAL J. H. MCBRIEN, Chief of the Canadian General Staff, said that aviation was a growing link in the Empire. The policy of the Canadian Government was at the moment uncertain. It might hand over all civil aviation in future to private companies. At present 50,000 square miles of country were being mapped per year by co-operation between the Canadian Ordnance Survey and the Royal Canadian Air Force. Canada was out to buy British equipment when it was as good as what could be bought elsewhere. [Presumably he meant to say, so long as it could be bought at the same price. Nobody can deny the quality of British products. But the cut price of French and American stuff kills our markets.]

Thus ended a party which was truly historic.

THE AIR SURVEY EXHIBITION.

The exhibition of examples of air survey work which was organised jointly by the Aircraft Operating Co. Ltd., and the Air Survey Co. Ltd., for the benefit of the Dominions Premiers on the occasion of the display at Croydon has now been transferred to the Air Ministry, Gwydyr House, Whitehall, where it is open to the public.

This exhibition is well worth visiting. It covers practically the whole range of survey by aerial photography, from the methods adopted for surveying large unmapped areas by oblique views for the production of reasonably accurate small scale maps to the highly precise methods used for revising the British Ordnance Survey maps in the neighbourhood of Eastbourne.

One of the most interesting and striking exhibits is a series of photographs taken in British Guiana by Major Hemming and Major Cochran Patrick, of the Aircraft Operating Co. Ltd. One set shows what can be seen from the river which is the only practical service travel route. One can see water with high trees at each side—but nothing whatever of the surrounding country. The other set shows what can be seen from the air even at so low a height as 500 ft. The air photographs reveal mountains whose existence could not be suspected from the river, and a general idea of the river's course that is entirely absent in the surface views. It is easily realised from this exhibit how a few hours' flight over country of this description will give a fairly clear idea of the topography of the whole district covered, whereas no surface method of survey could give the same general knowledge except at an enormous expenditure of time and labour.

The methods actually used for aerial survey vary widely according to both the nature of the country to be surveyed, and the nature of the results required. For the mapping of large undeveloped areas the first requirement is usually a reasonably accurate small-scale map which can be produced rapidly. For this class of work, oblique photography, based on the minimum of fixed reference points on the ground is the most economical method.

Where the country is flat—as in large areas of Canada—plotting may be carried out very rapidly by the use of what is known as a perspective grid. By this method it is necessary only that photographs should overlap and that they should all include the horizon, and a very small number of fixed reference points is required to maintain reasonable accuracy.

If similar surveys have to be made in hilly country this method fails because points at different levels appear to be displaced relative to the perspective grid. A more complex form of grid—devised by Prof. Melville Jones—has to be used. This grid enables the bearing angle and the angle of depression from the aeroplane of each point on the photograph to be ascertained. To determine the true position in plan of that point, it must appear in at least two different

photographs, and in addition the position of the aeroplane at the moment of taking each picture must be known.

This method calls for either a considerably larger number of reference points fixed on the surface and included in the photographs, or for vertical as well as oblique photographs and very accurate navigation of the aeroplane.

General mapping over wide areas having been completed whether by air or other methods, more detailed surveys of smaller areas will next be required. These in general will be made by vertical photography, but the method of reducing the photographs to map form will vary widely with the degree of accuracy required and the facility with which accurate fixed points on the ground can be used to correct the photographs.

In the total absence of fixed points on the ground the accuracy of survey depends practically entirely on the accuracy with which the pilot can fly, and the resulting map is merely the most consistent mosaic that can be made up from the photographs.

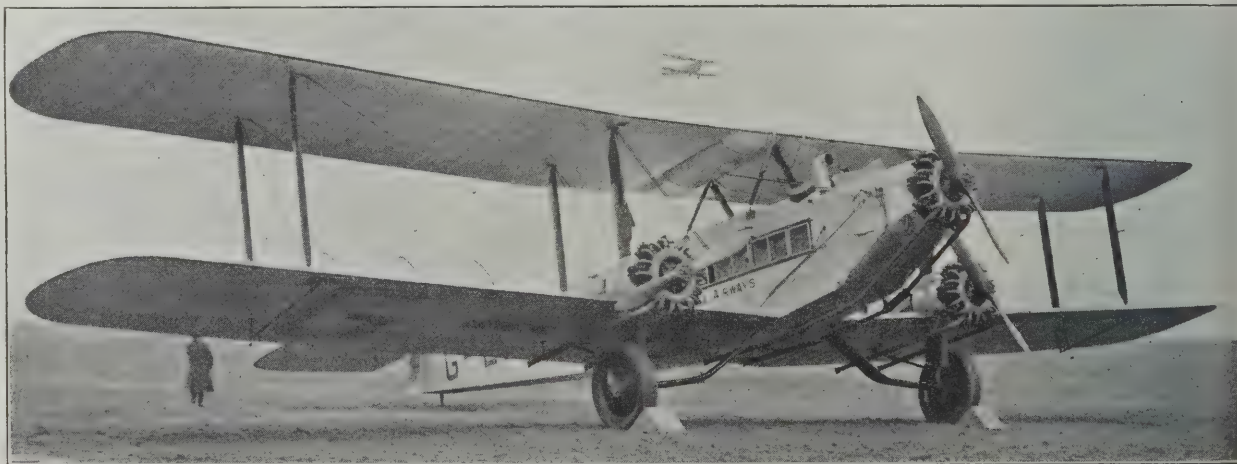
As the number of fixed points in the surveyed area increases the accuracy with which the photographs can be corrected for unavoidable changes in height, tilt, and so forth increases, and the accuracy of the survey increases.

When aerial survey is used—as at Eastbourne by the Aircraft Operating Co. Ltd.—to revise the highly accurate Ordnance surveys, the fixing of positions of points not shown in previous surveys becomes almost a mechanical process of high precision. When it is used to map a district such as that of the Irrawaddy plotting by the Air Survey Co. Ltd., it is to some extent a matter of trial and error tempered by the judgment of the individuals concerned.

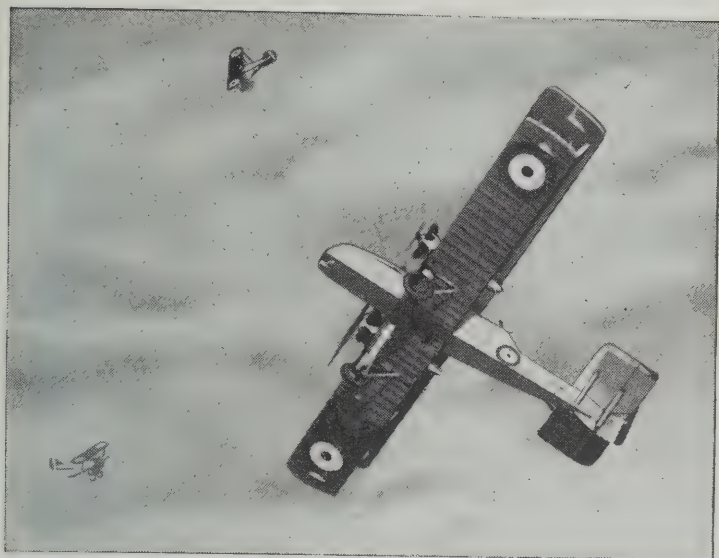
The methods adopted therefore in translating air photographs into maps differ widely according to the circumstances of the particular survey. At this exhibition there are to be found excellent illustrations of some of the methods which have been used successfully, and these give a very much better idea of the adaptability of the aerial methods of survey to all sorts of conditions than can possibly be given in any written account of the exhibits.

These illustrations include specimens of work carried out by both the Aircraft Operating Co., and the Air Survey Co., and in addition some exhibits of work by the Royal Air Force, the Royal Canadian Air Force, and Prof. Melville Jones. In addition the method of plotting from vertical photographs adopted by the Ordnance Survey is shown.

Of very great general interest—quite apart from the technical interest—is a mosaic map on the scale of 25.3 inches to the mile of a large section of London which has been made by the Aircraft Operating Co. Ltd. This mosaic has been corrected to the Ordnance map of the same scale. A few minutes spent in looking at the map will give even to those most familiar with this part of London a much more graphic idea of what London really is than can be obtained from any other type of map or street-level view.

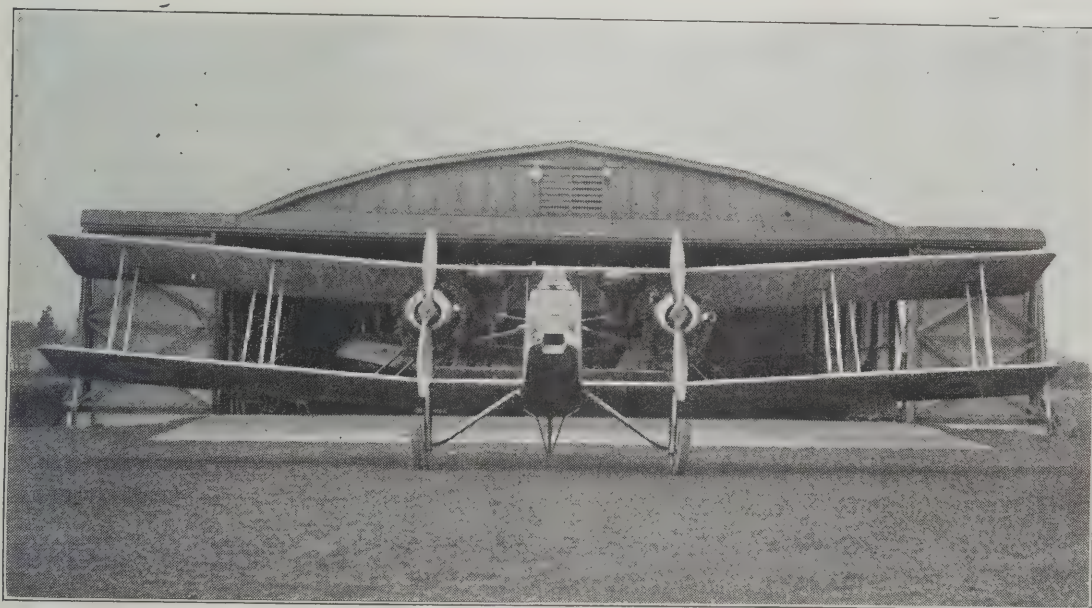


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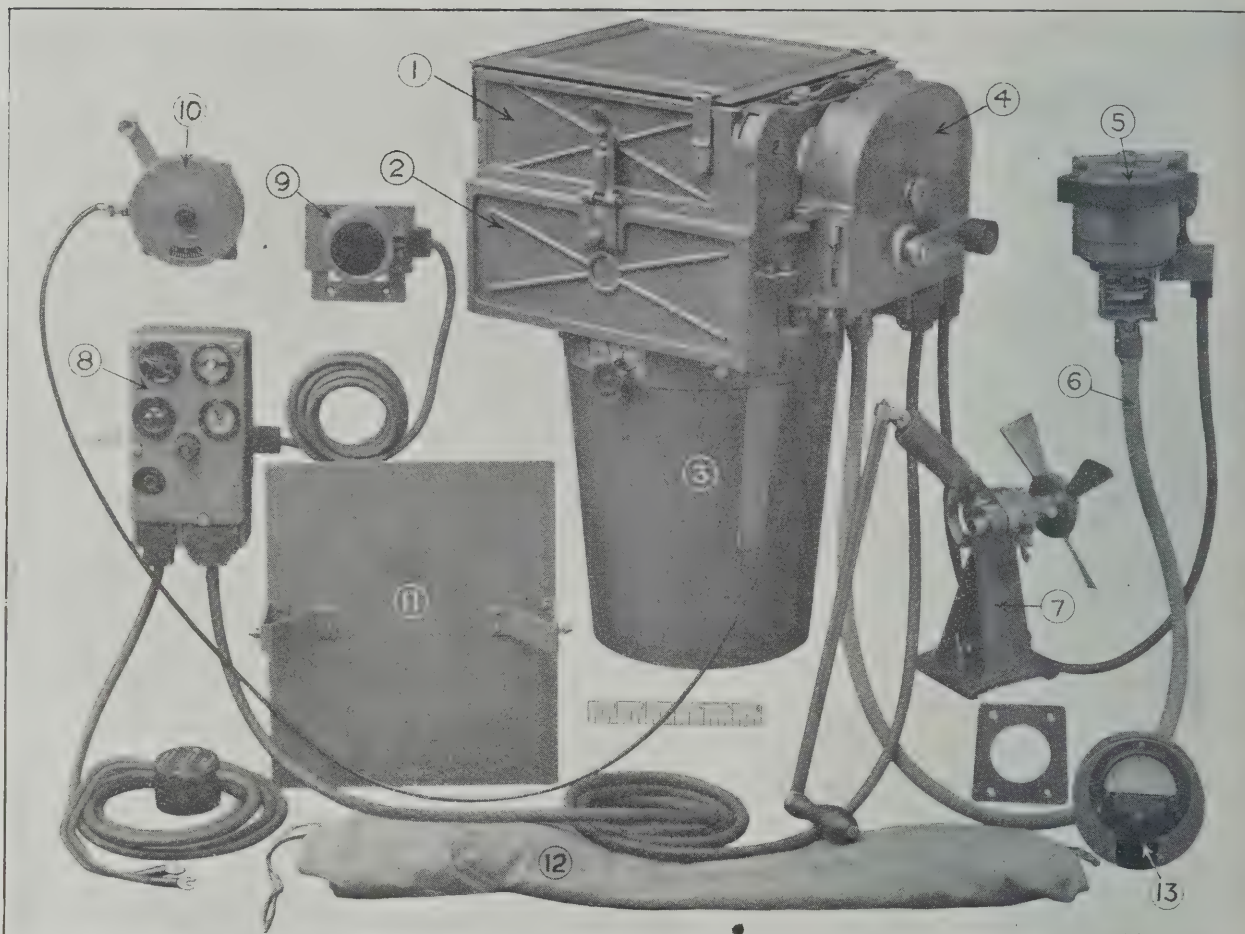
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THE EAGLE AIR CAMERA.



THE WILLIAMSON EAGLE CAMERA.—(1) Film magazine, (2) camera body with shutter, (3) lens cone, (4) gear-box, with handle for hand operation, (5) electric motor coupled by (6) flexible drive to gear-box, (7) windmill which may be coupled to the flexible drive (6) instead of the electric motor, (8) control box with (left to right and top to bottom) main switch, exposure counter, shutter setting indicator, time interval setting and indicating gear, setting knob for time interval gear, and (bottom left) extra exposure button; (9) pilot's signal lamp warning of exposure, (10) hand exposure lever for use when automatic control is not used (11) camera cover plate for use when film magazine is removed, (12) bag to enclose camera when not in use, (13) voltmeter for motor circuit.

The Eagle Air Camera is a recent British production which has been adapted as standard service equipment by the R.A.F. It was used by the Aircraft Operating Co. Ltd. for the experimental survey of the neighbourhood of Eastbourne last year, and will be used by them in the Rhodesian Mineral prospecting survey which is about to start.

The most notable quality of the Eagle camera is its versatility. It is suitable for either oblique or vertical photography, and it can be fitted with lenses of from seven to 20 inches focal length. It is normally arranged for fully automatic operation, but when so operating it is possible for the observer to interject into the automatic series of exposures, any extra exposures that he may consider necessary, without interfering with the automatic sequence.

It can also be operated semi-automatically,—that is exposures may be made by hand, and the resetting of the shutter, changing of films, etc., done automatically—or it may be purely hand operated.

Both operation and control may be done electrically, or the mechanism of shutter-setting and film-changing may be a windmill. In which case control may be either electrical and automatic, or by hand. Complete hand operation, which is possible, would naturally only be used in the event of failure of the power drive.

The camera is built up of a series of interchangeable units, in order to secure simplicity of repair and replacement of damaged parts, and is constructed almost entirely from light alloys.

Interchangeable lens cones for lenses of 7, 10 or 20 inch focus are made as standard, and special cones for other focal lengths can be supplied to order. A focal shutter, with a main and a capping blind, of the fixed slit type, giving an exposure of $1/90$ second is provided.

Film magazines, which can be changed in the air, each have a capacity of 65 feet of 9 inch wide film, which is enough for 100 exposures.

The area of image produced is 7 in. by 7 in., leaving a margin of 2 inches wide along one edge. At the moment of each exposure there are projected upon this margin images of a watch, giving the precise time of the exposure, of a T

level showing the tilt of the camera at the moment, of a Veeder counter which gives the consecutive number of the exposure, of an altimeter giving the height, and a ticket whereon may be written any other information such as date, or the like, which it may be desired to record upon the film.

The control gear for automatic operation consists of a small switch board connected to the camera by a flexible lead with plug-in connections. This control-board may be fixed in any convenient position for the observer.

It contains a main switch which puts the camera into or out of action, a counter which shows the total number of exposures made, a gear which sets the time-interval and indicates the setting, an indicator which shows whether the shutter is set ready for exposure, and a button the pressing of which will produce an extra exposure.

The gear which sets the time-interval consists of a dial graduated in seconds and provided with two hands. One of these is set by turning a knob to the desired interval between exposures. The second is controlled by a clock movement, and is automatically returned to zero each time an exposure is made. The moving hand thus shows at any instant the time since the last exposure, and the time to elapse before the next. Five seconds before a fresh exposure is due a red lamp is caused to light in the pilot's cockpit, warning him to hold the machine steady.

This control is normally used in conjunction with an electric motor driving the camera mechanism. This motor may be carried in any convenient position, and is coupled to the camera by a drive of the speedometer type. This drive may be disconnected, and a similar drive from a windmill in the slipstream may be substituted.

If batteries are available the windmill drive and the electrical distant control and automatic timing gear may be used in conjunction. Smaller batteries will suffice for this combination than are necessary when the drive is also electric.

If no batteries are carried or if they should fail, the windmill drive may be used in conjunction with a hand exposure control which is connected to the camera by a Bowden cable.

Finally, in the event of power drive failing altogether,



The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
5. The petrol is carried in a 12-gallon streamline tank above the top wing, which gives a cruising flight of three hours. The oil is carried in a streamline tank on the port side of the fuselage.

FASTEST MACHINE in the GROSVENOR CUP RACE, 1926. Average Speed, 105.5 M.P.H.

WESTLAND AIRCRAFT WORKS,
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Specification.

Leading Weights and Dimensions:

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|-------------------------------------|-----|----------------------|
| Weight, fully loaded | ... | 1,150 lbs. |
| Weight, light, without fuel and oil | ... | 640 lbs. |
| Fuel capacity | ... | 12 gallons. |
| Useful load apart from fuel and oil | ... | 380 lbs. |
| Surface | ... | 145 sq. ft. |
| Span | ... | 30 ft. 8 ins. |
| Width, folded | ... | 9 ft. 9 in. |
| Length | ... | 20 ft. 5 in. |
| Petrol consumption | ... | 20 Miles per gallon. |

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE ORIENT EXPRESS (NEW STYLE).—The first of the D.H.66 (Hercules) type (three Bristol Jupiter engines) built for Imperial Airways Ltd., to be used on the Cairo—Karachi line.

shutter-setting and film-changing can be done by turning a handle on the camera itself after each exposure. The Eagle camera was designed and is made by the Williamson Manufacturing Co. Ltd. of Willesdon Green, and the sole selling agents are Vickers Ltd., of Vickers House, Broadway, S.W.1.

THE TRIALS OF HERCULES.

On Wednesday last the De Havilland Hercules air liner designed to the specification of Imperial Airways for the Cairo—Karachi service, was inspected at Stag Lane by a large crowd of people. This machine was illustrated and its initial tests were described in *THE AEROPLANE* of Oct. 6.

The Hercules is a large biplane driven by three Bristol Jupiter VI engines of 450 h.p. each. It is capable of carrying a paying load, excluding the crew, of 3,284 lbs. Its speed at ground level is 130 m.p.h., and it can cruise comfortably at 110 m.p.h. The wing span is 79.6 feet, the length is 66 feet and the height 18 feet.

The minimum amount of power necessary to fly level with a full load is said to be only 375 h.p.. It can fly comfortably with any two engines. With the centre one alone from an altitude of 4,000 feet it can reach a landing place 30 miles away. These figures may appear to be self-contradictory, but they are given on high scientific authority.

Everything on the Hercules is of very large size, but so well is the machine proportioned that actually it looks quite small. For instance, the weight of petrol carried by the Hercules is equal to that of seven complete D.H.53s (Humming Bird monoplanes), and the exhaust manifold of one single engine costs as much as a complete "Austin Seven."

On Wednesday Mr. Broad, who did the original tests, gave a convincing demonstration with the machine. Its climb is exceptionally good and he definitely flew the machine on various combinations of one, two and three engines. One had the pleasure of a flight in it with Mr. Broad, sitting alongside him "on the box," as Sir Sefton Brancker terms the front seat. (For the benefit of the younger generation who have only been brought up with motor-cars, the "box" was the term used in carriages to denote the seat beside the coachman.)

One point of distinct interest is the arrangement of the instruments on the wing engines. These have been devised by Mr. Chorlton, who runs the aeronautical side of S. Smith and Sons. Mr. Chorlton has long realised that with the ordinary arrangement it is extremely difficult to see at a glance the reading of an instrument a few feet away, with



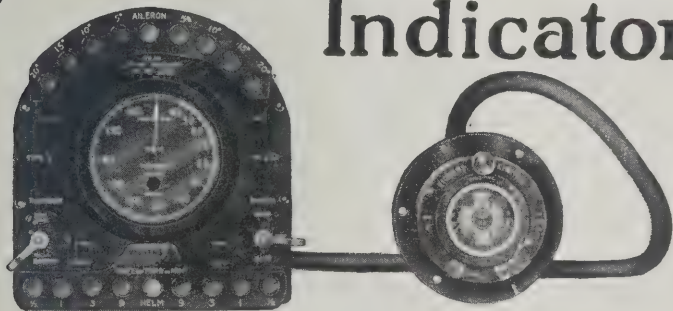
AN OLYMPIAN ALLIANCE.—Jupiter and Hercules. The installation of the three Bristol Jupiter engines in the De Havilland Hercules. The thing which looks like a loud-speaker behind the pilot is the ventilator to the cabin and the apparatus on this side of it is the Bristol starter-engine. The excrescence on the inner strut is the instrument-board of the port engine, and the two long things in front of the tanks in the upper wing centre-section are petrol gauges.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE TRIALS OF HERCULES.—Some typical attitudes in the air of the De Havilland 66 (Hercules), and her Jupiter VI engines, doing trials before proceeding for duty on the Cairo—Karachi line.

the result that he has produced instruments with large and clear figures that can be seen by anybody whether they can pass the Air Ministry sight test or not.

The instruments themselves are no bigger than the old ones, and in fact they are actually a good deal lighter, and are definitely a step towards easing the pilot's duties.

On the occasion of the flight in question one had one's head in the office when the machine was taking off (not from fright but merely to watch the behaviour of the various instruments in the cockpit) and when one looked out within a few seconds of the engines being opened out fully the machine was already about 500 feet up in the air. The vibration which has been noticeable in other three-engined machines when the centre engine is running is not nearly so marked, and with the centre engine throttled down it is practically non-existent.

The machine is light on its controls and easy to handle and when all engines are full out and the machine is flying level the needle of the speed indicator very nearly reaches the 130 m.p.h. mark.

Cruising normally at 110 m.p.h., the engines can be throttled right back with the result that the petrol consumption for the machine is very low. In fact, during a test flight to Chelmsford and back in the morning, the petrol consumption was found to be five gallons per hour per engine less than that of any other three-engined machine.

The cabin is relatively quiet. The noise is less than that experienced in the carriage of a train on the Piccadilly Railway, and slightly more than on the Central London.

The machine looks like being an extremely successful proposition.—G. D.

CANADIAN ENTERPRISE.

Canadian Vickers Ltd., of Montreal, P.Q., Canada, the only fully-equipped engineering plant in the British Empire designing and manufacturing aircraft outside Great Britain, have a very interesting programme of new construction on hand.

It will be remembered that their first product, the Vedette, which was designed by Mr. W. T. Reid, late in 1924, was originally fitted with a 260 h.p. Rolls-Royce Falcon engine. In 1925 it was fitted with the 200 h.p. Wright Whirlwind air-cooled radial engine, and, thus fitted, was the first flying-boat to be equipped with an air-cooled engine as a pusher.

Six of these boats have been delivered, five to the Royal Canadian Air Force and one to a private company. These boats have been used practically exclusively for photography and forest sketching and have done considerable work with conspicuous success.

Three of the six have been fitted with the Armstrong-Siddeley Lynx engine, which engine, incidentally, is being standardised by the Canadian Air Board for all their new aircraft, and although of nominally less power than the Whirlwind, it is giving as good a performance and operates successfully as a pusher engine.

Their second product, the Varuna, produced in 1925, was a twin-engined flying-boat fitted with two Wright Whirlwind engines. This boat has undergone a thorough series of trials by the R.C.A.F., and it is, together with the Vedette, the subject of a repeat order, the only modifications called for being the substitution of the Lynx engines for the Whirlwinds.

Their new work on hand includes the design and construction of four new types, three for the Canadian Air Board and one for themselves.

The first is a small single-seat flying-boat which is being built as an experiment to determine whether certain phases of forest patrol can be done efficiently by single-seat aircraft fitted with some type of wireless apparatus capable of transmitting certain predetermined signals.

The boat, which will be a braced monoplane with the wing attached direct to the top of the duralumin hull, and the engine, a 60 h.p. Armstrong-Siddeley Genet, mounted above the wing, is being built in two variations. One will be a pusher boat with the pilot well forward in the nose, and the other, a tractor, with the pilot behind the wing and provision for an additional seat for instructional purposes.

These two machines are essentially for fire-patrol purposes, and the object of their production is to get the smallest practical machine that will go up and stay up over the forest areas during the season of fire hazard at the minimum cost.

The second machine for the Air Board is a single-seat metal-fuselage biplane with interchangeable floats or wheels, and fitted with the Armstrong-Siddeley Lynx, for fire-patrol work over the foot hill forest reserves in the High River district of Alberta, where most of the operations are over land.

The third Air Board machine is a three-seat, twin-engined biplane specially designed for taking vertical or oblique photographs. It will have interchangeable wheels, floats and skis, and will have accommodation for pilot, navigator and photographer.

The desire for high performance and the need for clear vision ahead has necessitated the fitting of two Armstrong-Siddeley Lynx engines. This machine will be one of the most advanced photographic types yet produced, and is the first that has been specially designed for this particular work, which has such a big field in Canada and other Dominions and British possessions.

The fourth machine, the Vanessa, is a five-seat, all-purpose cabin biplane, to be fitted with the Armstrong-Siddeley Lynx and interchangeable floats, wheels and skis. It is being built to meet the demand for a medium-sized general-purpose machine for commercial work.

The enterprise of Canadian Vickers Ltd. in opening an aircraft branch, and obtaining the services of Mr. W. T. Reid, late of the Bristol Co., seems to have been justified.

It is well to remember that some years ago, before the operations of the Canadian Company began, the Canadian Air Board issued specifications for certain specialised types of aircraft desired to meet Canadian conditions. These met with little or no response in England, presumably because it was thought that the resultant orders would be small. Also, because the Canadian requirements were not fully understood, it was assumed that any aeroplane built for European conditions could, by the substitution of equipment, be adapted for use in that field. This fallacy has been exposed by the progress of the Aviation Department of Canadian Vickers Ltd.

The fact that they have produced a machine specially for aerial photography, which seems likely to be economical to operate, should be of considerable interest to the growing number of aerial survey companies who are at present compelled to operate with out-of-date equipment because of the lack of suitable aircraft.—L. B.

THE ITALIAN MINISTRY OF AERONAUTICS.

General Bonzani has resigned his Under-Secretaryship for the Ministry of Aeronautics and has been succeeded by General Italo Balbo.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

Nov. 2.

GENERAL DUTIES BRANCH.—The following are granted perm. comms. in the ranks stated:—FLY. Lr.—C. R. Carr, D.F.C. (Nov. 1). FLG. OFF.—E. M. Drummond (Lt., Half-Pay List, Army) (Oct. 20).

Pt. Off. J. S. Blomfield is promoted to the rank of Flg. Off. (Oct. 14). Air Vice-Marshal Sir O. Swann, K.C.B., C.B.E., is placed on half-pay, scale A (Nov. 2).

Flg. Off. A. E. Connolly is transferred to the Stores Branch on probation (Oct. 25). Flt. Lt. A. Chapman is placed on the retired list (Nov. 1). Flg. Off. A. Neeson is placed on the retired list at his own request (Nov. 3). Flt. Lt. D. S. Jillings, M.C., is granted permission to retain the rank of Sq. Ldr. on retirement (Oct. 1).

The following are transferred to the Reserve:—CLASS A: FLY. LT.—A. E. Woodbridge (Nov. 1). FLG. OFFS.—F. Beesley (Nov. 2); J. F. Bythell (Nov. 2); W. E. Cowan (Nov. 3); O. J. F. Jones-Lloyd (Nov. 5).

CLASS B: FLY. LT.—J. M. McEntegart (Oct. 24). The following Flt. Lts. are transferred to the Reserve, Class A (Oct. 24) (substituted for the notification in the Gazette of Oct. 26):—W. Halford, D.F.C., S. H. Potter, R. J. Read.

Flg. Off. H. E. F. Saunders is transferred to the Reserve, Class C (Sept. 12) (substituted for the notification in Gazette of Sept. 17); Flg. Off. L. W. Mercer (Lt., R.A.), relinquishes his temp. comm. on return to Army duty (Oct. 20); Pt. Off. F. N. Garthwaite relinquishes his S.S. comm. on account of ill-health (Nov. 3).

MEDICAL BRANCH.—Temp. Lt. V. G. Pedley, General List (Army), Dental Surgeon, is granted a temp. comm. as a Flg. Off. on attachment to the R.A.F. (Oct. 18). He will continue to receive emoluments from Army sources; Flg. Off. G. J. Hanly, M.B., is promoted to rank of Flt.-Lt. (Oct. 23).

CHAPLAINS' BRANCH.—The Rev. W. P. Hughes is granted a S.S. comm. with the relative rank of Sq. Ldr. (Oct. 29).

MEMORANDUM.—Sec. Lt. J. L. Rodrigues is deprived of permission to retain his rank on conviction by the Civil Power (Oct. 1).

RESERVE OF AIR FORCE OFFICERS.—F. J. Wright is granted a comm. to Class A.A., General Duties Branch, as a Pt. Off. on probation (Oct. 18); Pt. Off. on probation D. P. Jones is confirmed in rank (Oct. 27).

The following Flg. Offs. are transferred from Class A to Class C:—H. Jones (July 14); G. F. Blackburn (Nov. 2).

The following relinquish their comms. on completion of service:—Flg. Off. M. B. Lacey (June 26); Flt. Lt. H. V. Worrall, D.S.C., Flg. Off. R. W. Warner, Flg. Off. J. S. G. Wrathall (Sept. 12); Flg. Off. J. R. Stafford-Langan, D.F.C. (Oct. 15); Flg. Off. W. Halliwell, Flg. Off. A. J. H. Taylor (Oct. 24).

Flg. Off. H. W. Prockter relinquishes his comm. on completion of service and is permitted to retain rank of Flt. Lt. (Sept. 16); Flg. Off. J. S. Hughes relinquishes his comm. on account of ill-health, and is permitted to retain his rank (Nov. 3); Flg. Off. J. M. Leach resigns his comm. on appointment to a comm. in the Auxiliary Air Force (Nov. 2).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Flg. Off.:—No. 605 COUNTY OF WARWICK (BOMBING) SQUADRON.—J. M. Leach (Nov. 2).

Appointments.

Week ending Nov. 8.

GENERAL DUTIES BRANCH.—Wing Commander E. R. Manning, D.S.O., M.C., to School of Naval Co-operation, Lee-on-Solent, to command, 1/11. Squadron Leader J. C. P. Wood, to H.Q., Egypt, 21/10.

Flight Lieutenants F. Thomasson, D.F.C., M.M., to Reception Depot, West Drayton, 1/11. E. H. Richardson, to No. 10 Group H.Q., Lee-on-Solent, 20/10. F. H. Isaac, D.F.C., to H.Q., Wessex Bombing Area, Andover, 2/11. R. L. McK. Barbour, D.F.C., to Experimental Section, R.A.E., Farnborough, 28/10.

Flying Officers A. H. C. A. Rawson, to R.A.F. Cadet College, Cranwell, 2/11. G. E. Nicholletts, to R.A.F. Station, Donibristle, on transfer to Home Estab., 17/10. F. T. Stacey, to R.A.F. Depot, on transfer to Home Estab., 17/10. F. W. M. Matthews, to A. and G. School, Eastchurch, 21/10. G. H. Huxham, to No. 208 Sqdn., Egypt, 20/10. H. A. Anson, to No. 32 Sqdn., Kenley, on transfer to Home Estab., 13/11. B. J. Nimmo, to No. 2 Armoured Car Coy. and Repair Section, Palestine, 1/10. C. G. H. E. Lumsden, to No. 43 Sqdn., Henlow, 12/11. H. E. N. Burton and R. W. Holden, to No. 24 Sqdn., Kenley, 1/11. E. M. Drummond, to No. 100 Sqdn., Spittlegate, 3/11. J. F. F. Pain, to No. 16 Sqdn., Old Sarum, 9/11. H. A. S. Byrne, to No. 30 Sqdn., Iraq, 1/10. H. V. Crowder, F. G. H. Ewens and W. J. M. Spaight, to No. 70 Sqdn., Iraq, 1/10. A. P. Wayte, to Heliopolis Details, Egypt, 20/10.

Pilot Officers J. L. Adams, J. F. Dowdeswell and R. H. Winn, to No. 9 Sqdn., Manston, 9/11. C. A. Anderson, L. G. Gray, F. J. Parker and L. C. Phillips, to No. 13 Sqdn., Andover, 9/11. R. Benham, to No. 207 Sqdn., Eastchurch, 9/11. T. B. Byrne, H. J. J. Mumford-Mathews, E. G. C. Stokes and E. L. Wilson, to No. 2 Sqdn., Manston, 9/11. D. V. Ivins, to No. 16 Sqdn., Old Sarum, 9/11. R. O. O. Taylor, to No. 58 Sqdn., Worthy Down, 9/11. W. G. Woolliams, to No. 39 Sqdn., Spittlegate, 9/11.

MEDICAL BRANCH.—Flight Lieutenant T. J. X. Canton, M.B., to R.A.F. Depot, 1/11.

STORES BRANCH.—Pilot Officer P. H. Wilcox, to H.Q., Cranwell, on appointment to a Perm. Comm. (on probation), 30/10.

ACCOUNTANT BRANCH.—Flight Lieutenant J. Sullivan, to H.Q., Egypt, 1/10. Flying Officers S. W. Hill, to H.Q., Cranwell, 8/11. R. W. Freeman, to No. 4 F.T.S., Egypt, 20/10.

Sheikh Mahmud.

The Times correspondent in Basra, in a message date Nov. 2, states:—

It is reported that the Kurdish insurgent Sheikh Mahmud, who recently released the two members of the Royal Air Force who had fallen into his hands, is about to surrender on the Government's terms, which are that he must live in Persia and submit to the confiscation of his estates in Iraq. Probably he will be awarded a small pension.

Recently the insurgent Kajar Prince, the Salar ed Dowleh, who is in arms against the Pahlavi Shah, asked Sheikh Mahmud for help,

but was unsuccessful. The Kajar Prince is reported on good authority to be advancing on Ruwansir, a small town about 40 miles north-west of Kermanshah.

The Air Services Association.

The Smoking Concert arranged by the Air Services Association, to take place at "The Stirling Castle," London Wall, will be held on Nov. 25, and not on Nov. 18 as announced in THE AEROPLANE last week.

Further information concerning the Association, which was formed originally to bring together the officers and men of the Aegean Group, may be obtained from the hon Secretary, Douglas H. Simmonds, 50, London Wall, E.C.

All former members of the R.F.C., R.N.A.S., and R.A.F., will be welcome at the Concert on Nov. 25.

THE R.A.A.F. PACIFIC FLIGHT.

On Oct. 30, Group Capt. R. Williams, D.S.O., O.B.E., Chief of the Australian Air Staff, Flt. Lt. I. E. MacIntyre, C.B.E., A.F.C., and F./Sgt. Trist, R.A.A.F., who are engaged on a flight through the islands of the Southern Pacific on a D.H.50a seaplane, arrived at Kiota from Rabaul, Bismarck Archipelago.

While at Rabaul, Group Capt. Williams was instructed to fly over the New Guinea goldfield and surrounding district with a view to intimidating the local natives who were responsible for the death of three white prospectors and the wounding of others. It was hoped that the appearance of the unarmed D.H.50 would have a moral effect on the natives who are reputed to be hostile and treacherous, and reduce them to a state suitable for the attentions of a land punitive expedition.

On Nov. 5 Group Capt. Williams arrived at Tulagi, the chief settlement in the Solomon Islands.

A DISTINGUISHED VISITOR AT THE I.Ae.E.

On Nov. 16, at 6.30 p.m., Mr. A. G. von Baumhauer, Assistant Director of the Royal Aeronautical Laboratories at Amsterdam, will read a paper entitled "Some Notes on the Possibilities of Progress in Aviation," at a meeting of the Institution of Aeronautical Engineers. The meeting will be held in the rooms of the Junior Institution of Engineers, 39, Victoria Street, S.W.1.

Mr. von Baumhauer is well known in British aeronautical circles as one who combines a wide and extensive technical knowledge with a width of outlook and an openness of mind not always associated with the first quality.

Mr. von Baumhauer's subject is the all-important one of resistance and how it is caused. As the author points out, if wings and bodies alone constituted a practical aeroplane modern knowledge would enable one to produce transport aircraft of very high speed and very low resistance. Unfortunately aeroplanes require landing gears, engine cooling, induction, and exhaust system, and the pilots need to have a good view.

These factors make it impossible to use ideal shapes of minimum resistance. The designer has to break his lines, and the art of designing an efficient aeroplane seems to consist in the tact and wisdom exercised in making these "breaks" in such a way as to spoil the flow over the whole machine as little as possible.

To do this effectively a knowledge of the mechanism which sets up resistance, and how disturbances alter the flow along a body is desirable. The theory of the "boundary layer," originally due to Prandtl, has now been developed to an extent which gives at least a qualitative explanation of many resistance phenomena, and the author gives a simple and clear outline of this theory in his paper.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Nov. 7.

Total flying time 35 hrs. 15 mins.

The following members had dual instruction:—G. C. Bonner, T. C. Sharwood, F. Clarkson, G. H. Saxon Mills, E. J. B. King, Miss Fletcher, D. H. P. Esler, B. Lester, H. Spooner, M. P. Susman, H. Solomon, L. G. Sykes, Lady Bailey, H. H. Samuelson, E. E. Shaw, Miss O'Brien, A. J. Richardson, R. A. St. John, V. H. Doree, R. L. Preston, E. A. Lingard, W. J. S. McLeod, J. L. Gardner, E. S. Brough, G. H. B. Maddocks.

The following made solo flights:—Lady Bailey, L. J. C. Mitchell, W. Hay, W. J. S. McLeod, E. S. Brough, Miss O'Brien, H. Petre, H. Kennedy, E. L. O. Baddeley, N. Jones, K. V. Wright, Sq. Ldr. M. E. A. Wright, Major K. M. Beaumont, N. J. Hulbert, D. H. P. Esler, G. H. Craig, A. R. Ogston, G. Terrell.

The following had joy-rides:—E. H. Walker, W. E. P. Johnson, G. H. Craig, Miss Spooner, G. F. Wilson, Mrs. McKay, R. G. Gallien. On Nov. 7 K. V. Wright passed the tests for his Certificate.

On Nov. 4 R. L. Preston, about to start on a solo, taxied into a ditch, causing slight damage to G-EBNP.

The Lancashire Aero Club.

Report for week ending Oct. 29.

Total flying time 20 hrs. 5 mins., made up as follows:—

Dual with Messrs. Brown and Cantrill: Messrs. Blagden 1 hr. 35 mins., Hindley 1 hr. 15 mins., Abdalla 1 hr. 10 mins., Leigh and Costa 1 hr. each, Twemlow and Gattrell 50 mins. each, Anderson 40 mins., Shiers 30 mins., Barnes 30 mins., Whittaker, Cohen, Nelson, Dobson and Miss Brown 20 mins. each, Miss Emery 15 mins., Mr. Michelsen 15 mins., Messrs. Goodyear and Hardy 10 mins. each.

Solos:—Messrs. Costa 3 hrs. 20 mins., Hardy 30 mins., Lacayo 20 mins., Agar 20 mins., Leeming 15 mins.

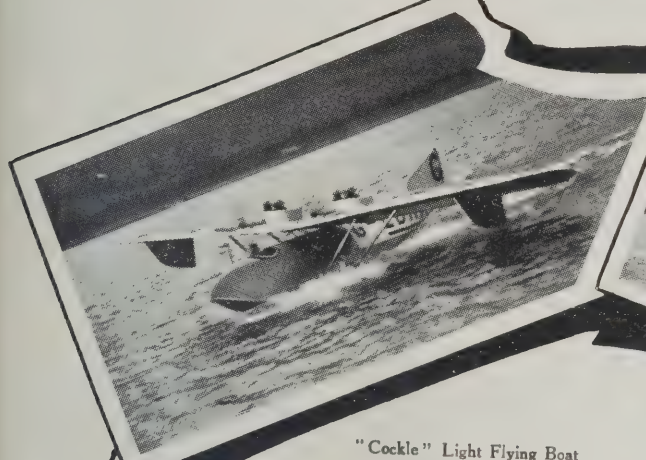
Joy-rides with Messrs. Brown, Cantrill and Leeming 1 hr. 30 mins. Tests 1 hr. 30 mins.

Leading the World

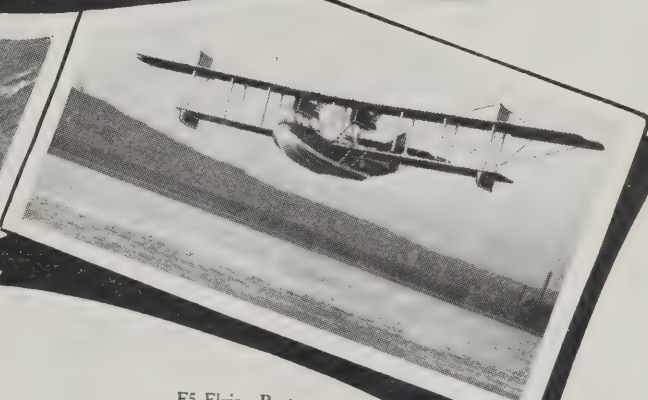
An extract from
"THE TIMES"
 of 20th August, 1926.

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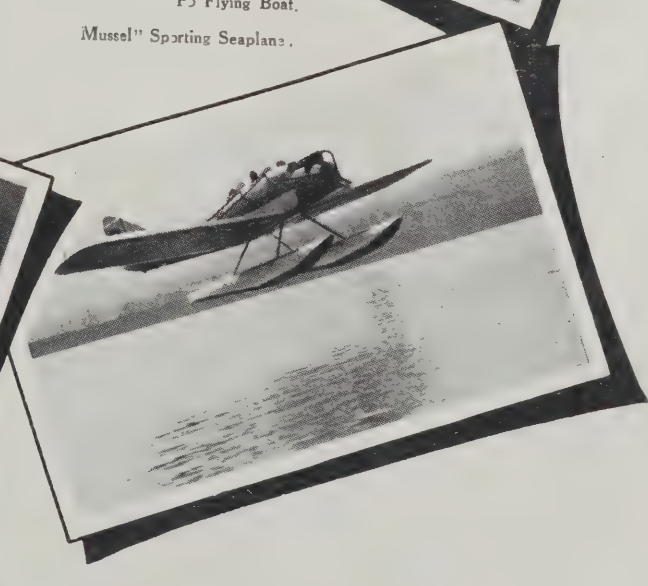
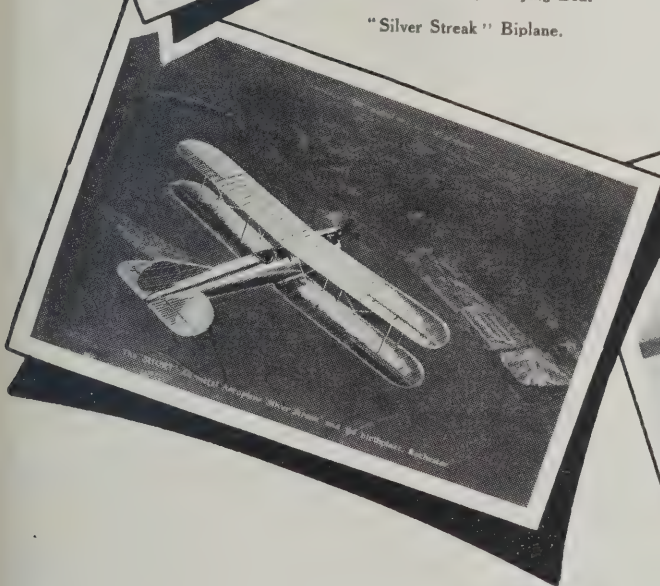
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The Trades' Union Spirit has been manifesting itself in the Club during the past few weeks. Two flying members, who between them carry most of the joy-ride passengers on Sunday afternoons, have entirely different styles of pilotage. One likes to float about the atmosphere in a series of gentle cart-wheels and half-rolls, ending up with a spinning nose-dive and a side-slip landing. The other (who has both a strong head and a strong stomach) is at his happiest when doing a vertical tail-slide stall, or stirring the porridge while on the top of a loop, both of which No. 1 pilot loathes.

An agreement has therefore been concluded between them whereby any joy-riders asking for "fore-and-aft" stunts shall be handed over to No. 2 pilot, while all those requiring "lateral" stunts shall go with No. 1 pilot. One may add that a suggestion by the latter to the effect that "hoppity-hoppity" landings might appropriately be considered as "fore-and-aft" stunts was met with dignified silence.

Report for week ending Nov. 6.

Total flying time 21 hrs. 45 mins., made up as follows:—Dual with Messrs. Brown, Cantrill and Scholes:—Messrs. Blagden 1 hr. 55 mins., Twemlow 1 hr. 20 mins., Cohen and Hindley 1 hr. 5 mins., Abdalla and Newton 45 mins., Dobson and Shiers 40 mins., Wood and Miss Brown 35 mins., Hardy 30 mins., Moore 25 mins., Nelson 25 mins., Miss Emery 25 mins., Messrs. Crosthwaite and Anderson 20 mins., Goodyear, Dickinson, Powell and Forshaw 15 mins., Hardy, Lacayo, Pitman, Williams, and Hargreaves 10 mins. Solos: Michelsen 1 hr. 10 mins., Costa 4 mins., Agar 25 mins., Williams 15 mins.

Joy-rides: With Mr. Leeming, Colwell 30 mins., Swindells 15 mins. With Mr. Lacayo, Benson 1 hr. 35 mins., Hartley 30 mins., Sivery 30 mins., Nelson 20 mins. With Mr. Williams, Mr. Cantrill 10 mins. Tests 1 hr. 30 mins.

The weather has been normal throughout, with gales, rain and fog predominating in turn.

One member, flying for the first time after 'flu, landed after a spinning nose-dive and reported that on pulling out to land he saw four aerodromes each doing a flat spin on its own. Fortunately he chose the right one for his landing.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Nov. 7.

Total flying time 14 hrs. 40 mins., 4 hrs. 45 mins. of this being flown on Sunday.

The following members flew solo and with passengers:—Lord Ossulston with Miss Leathart, Mr. Wardill and Mr. Mathews. Mr. N. S. Todd with Mr. Stewart, Mr. Bruce and Mr. Turnbull.

Mr. Irving put in a lot of solo flying, and will do the tests for his licence as soon as weather permits the height tests.

Mr. Mathews has also flown frequently alone.

Dr. Dixon flew with Mrs. Marcks and Mr. Phillips, Mr. Phillips taking charge of the machine on some occasions. As these members always fly together, it is seldom certain who is actually the pilot.

Mr. Heppell flew with Mr. Kennedy as passenger. Mr. Kennedy also flew with Mr. Ellis.

Mr. C. Thompson took up Mr. Osborne and Mr. Thompson.

Mr. H. Ellis completed his tests on Nov. 1. It was a very clear but cold day, and Mr. Ellis flew well and his judgment for landings, etc., was excellent.

Mr. Parkinson is still enjoying his rest from flying by spending his time at the aerodrome superintending the flying of members of the Club.

It is not yet decided who will take him up for "a few landings" on the completion of his four weeks on the ground, but no doubt the matter will have to be considered shortly. There should be a good attendance of members who only fly occasionally to witness this event.

The Yorkshire Aeroplane Club.

Report for week ending Oct. 29.

Total flying time 12 hrs. 5 mins., made up as follows:—Dual instruction, 11 hrs. 15 mins. Solo, 30 mins. Tests, 10 mins. Joy-rides, 10 mins.

The following flew solo:—Messrs. Dawson and Wood.

Mr. West gave dual instruction to the following members:—Messrs. Dawson (L. S.), Gratwick, Harvey, Mann, Oglesby, Pigg, Watson, Wilson, Winn, Capt. Beaumont and Miss Woodhead.

The weather has been poor (but honest) for most of the week, with fog in the morning and half a gale in the afternoon. These conditions evidently affect the solo time more than the dual: in these circumstances we have initiated research to demonstrate the coincidence of solo time with sunlight.

This week we succoured an orphan of the storm, when a Hyderabad from Bircham Newton arrived with an inch of snow on the top plane. He stayed with us one night, paid his shot like a man and went away again next morning. We are eagerly waiting for his next visit, after which we shall commence negotiations for the purchase of our hangar.

Mr. Rimmer is still with us, waiting with commendable patience for a fine day to complete his work for Aerofilms Ltd.

We have no less than five pupils ready to go solo, but have been unable to launch them in this weather. Mr. Watson grew tired of waiting and set off with Mr. West to find Harrogate, an Odyssey which will prove historic in the annals of the Club. Having passed vertically above Harrogate he proceeded to look for it at Knaresborough, Boroughbridge, Malton, Pocklington and York, and only desisted with the sunset.

The engine in G-EBNN has been down for a top overhaul. Our new cylinder heads have phosphor bronze valve seatings.

Rumour has it that when the production Bluebird appears it will be found that she has suffered a sea change (at Brough) into something not quite so rich and strange. The tail skid will, however, remain unaltered.

We are asked to contradict our statement of last week that two members had bought a pig (less engine) in a poke. This is indignantly denied: the pig was given to them.

Report for week ending Nov. 5.

Total flying time 7 hrs. 55 mins., as follows:—Solo flying, 1 hr. 30 mins. Dual instruction, 6 hrs. 5 mins. Joy-rides, 20 mins.

Flying was only possible on three days out of the week, 24 flights being accomplished in all.

The following members flew solo:—Messrs. Dawson, L. S. Wood, Lax and Watson.

The following were given dual instruction:—Messrs. Batcock, Brown, Dawson, L. S. Gratwick, Harvey, Mann, Oglesby, Watson, Wilson, Capt. Beaumont and Miss Woodhead.

In spite of the weather Messrs. Watson and Dawson were launched solo during the week. Both put up a very good show and should develop into really useful pilots. Miss Woodhead and Mr. Mann will shortly be launched.

Mr. Rimmer has now left us, the more hurriedly because Mr. West took him up on "I.S." on Saturday and suffered a forced landing with a choked jet. Mr. Rimmer, a little distraught, got out of the machine, went back to the aerodrome, flew away in his Avro and has not been seen since.

Mr. Wood has done one loop. The significance of this lies in the fact that he did not, as hitherto, inadvertently perform a second loop while pulling out of the first.

We wish to offer our most hearty congratulations and good wishes to Messrs. Stack and Leece, of the Lancashire Club, on the very difficult and sporting trip that they are taking on. We are particularly interested in this venture as we realise that we are supplying equipment for the trip to the extent of one wheel and one cylinder-head, which the most urgent personal appeals have failed to reproduce at Sherburn. However, the thought that our wheel should be well on the way to Karachi reconciles us to the sight of G-EBNN resting in a corner of the hangar with chocks delicately arranged below the axle.

May the seatings stick to the head and the spokes to the rim, and the very best of luck go with them both!

The Midland Aero Club.

Report for week ending Nov. 6.

Owing to bad weather flying was only possible on three days.

Total flying time 4 hrs. 5 mins.

The following members had dual instruction:—J. Brinton, C. Fellows. The following flew solo:—G. V. Perry, J. Brinton, E. J. Brighton.

The Hampshire Aeroplane Club.

Report for week ending Oct. 28.

Total flying time, 12 hrs. 26 mins. Instruction flying, 5 hrs. 40 mins. Passenger flying, 30 mins. Solo flying, 6 hrs. 26 mins.

The following members had instruction flights:—Messrs. Southcliffe 1 hr. 5 mins., Bailey 1 hr. 10 mins., Lt. Graham, R.N., 1 hr., Miss Home 45 mins., Messrs. Bound 30 mins., Cooper 25 mins., Westbrook 15 mins., Bishop 15 mins., Maloney 15 mins. Mrs. C. B. Fray had a 30 mins. joy-ride.

The following members flew solo:—Flg. Off. Clarkson 3 hrs. 55 mins., Perfect 53 mins., Lt. Musselwhite 46 mins., Lt. Kennedy, R.N., 30 mins., Mr. Fry 12 mins.

Report for week ending Nov. 4.

Total flying time 6 hrs. 25 mins. Instruction 3 hrs. Passenger flying 1 hr. 42 mins. Solo flying 1 hr. 43 mins.

The following members had instruction:—Messrs. Shepherd 30 mins., Bound 25 mins., Dickson 25 mins., Stokes 25 mins., Appleford 20 mins., Cooper 15 mins., Courtney 15 mins., Rumble 10 mins., Westbrook 10 mins.

The following had joy-rides:—Miss Fry, Miss Manning, Capt. Lamplugh, and Mr. Stanford.

The soloists were: Messrs. Simmonds 40 mins., Perfect 20 mins., Fry 18 mins., Rumble 10 mins., Bowen 5 mins., and Flg. Off. Clarkson 10 mins.

The Sydney (N.S.W.) Flying Club.

Report for week ending Sept. 27.

Total flying time 18 hrs., of which 6 hrs. 5 mins. were dual instruction.

Total number of flights, 64.

The week under review was not a good one, owing to a considerable amount of bad weather and the fact that the instructor was away for one day owing to illness.

It is expected that at least six pupils will be going for their "A" licences within the next few weeks.

The club-house on the aerodrome is beginning to take shape and it is hoped that it will be ready for occupation early in the New Year.

The Sydney Club's organisation has favourably impressed a number of Authorities and a number of requests have been received from several sources, including Queensland and Western Australia, for specimens of regulations and forms to assist the organisation of other clubs.

On Oct. 8 Flg. Off. H. Bowden Fletcher, D.F.C., R.A.A.F., was to have read a paper on "The Making of an Aeroplane and a Pilot," under the auspices of the A.F.C. Association, the proceeds of which were to have gone to the Sydney Club's "Flying Ball," held at the Hotel Australia on Oct. 12.

The Club Fund reached £64 7s. [A remarkable result for only eight weeks.—ED.]

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ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 10; Tuesday, 9; Wednesday, 13; Thursday, 12; Friday, 3; Saturday, 18; Sunday, 4.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 32, passengers 152, freight 12 tons.

AIR UNION:

Paris—London: Machines 12, passengers 23, freight 10½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 11, passengers 17, freight 3 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 12, passengers 12.

PRIVATE:

Machines 2, passengers 4.

Total number of trips by British Machines, 34, carrying 156 passengers. Foreign Machines, 35, carrying 52 passengers.

Comparative Figures:

Week ending Nov. 7:

Machines, 69; Passengers, 208; Crews, 81; Total personnel, 289.

Corresponding week, 1925:

Machines, 67; Passengers, 183; Crews, 80; Total personnel, 263.

Corresponding week, 1924:

Machines, 85; Passengers, 285; Crews, 106; Total personnel, 391.

Corresponding week, 1923:

Machines, 71; Passengers, 167; Crews, 107; Total personnel, 274.

Corresponding week, 1922:

Machines, 45; Passengers, 160; Crews, 73; Total personnel, 233.

Corresponding week, 1921:

Machines, 67; Passengers, 96; Crews, 99; Total personnel, 195.

Corresponding week, 1920:

Machines, 52; Passengers, 79; Crews, 63; Total personnel, 142.

Croydon Notes.

The first stage of the wedding of H.R.H. the Duke of Brabant and H.R.H. Princess Astrid of Sweden has been responsible for a certain amount of aerial activity. Mr. F. L. Barnard, on a D.H.50, flew from Malmö to Croydon on Wednesday with pictures of the preliminaries of the wedding, which happened on Tuesday. The pictures were taken by night train from Stockholm to Malmö. Mr. Barnard left Malmö at 06.55 hrs. and reached Croydon at 15.04 hrs. He had very bad weather for the whole trip and across Germany he was flying at tree level.

Mr. Hinchliffe was due to leave early on Friday, but the weather made it quite impossible to get off that day. He left on Saturday morning at 07.10 hrs., and, stopping only at Amsterdam, landed at Croydon at 15.45 hrs. In spite of the delay of one day he reached England quicker than those who made the surface passage from Stockholm.

On Monday of this week Mr. Olley brought back pictures of the Princess Astrid arriving at Antwerp on Monday morning and these appeared in the afternoon editions of the *Evening Standard*. Mr. Dudley Travers also brought back pictures for *The Daily Mirror*.

It has now been decided that Mr. F. L. Barnard, as senior pilot of Imperial Airways Ltd., will fly the Hercules to Cairo with Sir Samuel and the Lady Maud Hoare and Sir Sefton Branner and party. Thence the official party will be flown to Delhi by Mr. Wolley Dod.

Lt.-Col. Sheldermine will be the Air Ministry representative for the route as C.A.T.O. Lt.-Col. Burchall, who has been Assistant General Manager of Imperial Airways since he joined the firm, will continue to hold that appointment and as such will be Minister Plenipotentiary of the Cairo—Karachi route.

Mr. Wolley Dod will be Chief Pilot and the other pilots will be Messrs. W. F. Warner, R. D. V. Howard and Dudley Travers. Two other pilots have been chosen but not yet officially announced. All the four chosen people know the route well, as do the two A. N. Others.

Mr. "Sandy" Baxter, who was chief engineer to the Instone Air Line, and who has since 1924 been chief engineer to the aircraft side of Wm. Beardmore and Co. Ltd., is to be chief engineer of the route. Mr. C. H. Grace, who since the dawn of Civil Aviation has been chief of the A.I.D. at Croydon, will go East to organise and take charge of A.I.D. work for the route.

Taking it bye (buy or by) and large (whatever that phrase may mean) the management and operation of the route could not be in better hands. One congratulates the Management of Imperial Airways Ltd. on their selection. One suggests that the M.C.C. should hire them *en masse* next year for the Test Match Selection Committee.

Recently one stated in these notes that the triple-engined Fokker was considered by the R.A.F. to be, in the language of the period, a "wizard kite." This paragraph has been quoted in the current Fokker trilingual bulletin. "Wizard Kite" in French becomes "*Cerf-volant Magique*," and in Italian "*Cometa Magica*." "Magic Comet" seems an excellent variant of "wizard kite."

One gathers that the W.10 which drowned the Pomeranian dog in the Channel recently, is lost and gone for ever. It is believed to have broken up fairly soon after sinking. Besides the passengers the only freight recovered was a case of old glass (undamaged) and the mails. Both of these were in the cabin. As there is some £2,000 of platinum from the machine lying at the bottom of the sea it may be the fashion among Channel swimmers next year to swim the thing under water.

Rumour, for which one will not vouch, has it the Lowenstein Navy is acquiring two more Fokkers. One is a triple-Lynx job and the other a C.V. (a two-seat fighter) with a French Jupiter engine. The First Mate, Mr. Leslie Hamilton, is expected to bring the latter to Croydon this week. The machine is a two-seater and is to be used when the owner is in even more of a hurry than ever. It is believed by the imaginative that he will acquire a Curtiss or Macchi racer (whichever may prove the faster at Hampton Roads to-morrow) when he really does want to be quick. Meantime the C.V. ought to do well enough for fox-hunting round Melton Mowbray.—G. D.

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Edited by
E. C. Grey

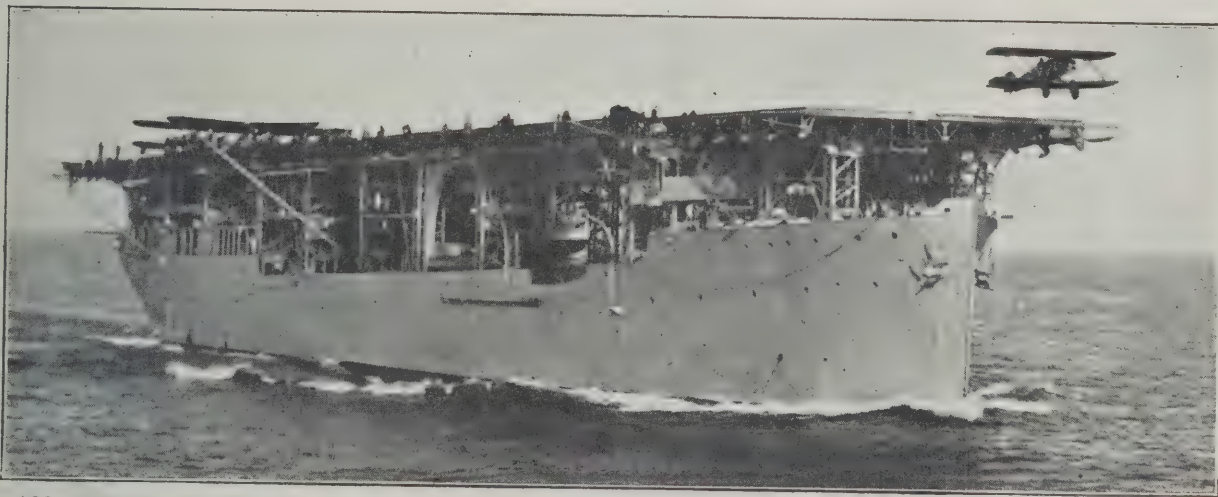
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Vol. XXXI. No. 20.

SIXPENCE WEEKLY.

"WHENCE AND WHAT ART THOU, EXECRABLE SHAPE?"
(Milton.)



AN AMERICAN CARRIER:—A Curtiss TS-1 shipboard fighter (200 h.p. Wright Whirlwind engine) taking off the deck of the U.S.S. *Langley*. The U.S. Aircraft carrier *Langley* was originally the Fleet-collier *Jupiter* and was converted to her present form in 1921. She has accommodation for 12 single-seat fighters, 12 two-seat reconnaissance machines, and 10 torpedo-carriers. Her maximum speed is 14.9 knots. The *Langley* was the first large ship in the U.S. Navy to be fitted with electric drive and she is also fitted with the Sperry Gyro-Stabiliser.

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:: INITIATIVE ::

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1926.

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ON BRITISH AVIATION.

On Nov. 10 the Royal Aero Club held its first Monthly House Dinner of the present season. The event is notable because it is the first occasion on which Lord Thomson of Cardington, lately Secretary of State for Air, the new Chairman of the Committee of the Royal Aero Club, has presided over a gathering of the Club in that capacity. And, very properly, the subject announced for discussion, was "British Aviation."

Whether it is right and proper that the speeches at these House Dinners should be reported is quite a debatable question. As the meetings take place in a private club house anything that is said thereat might well be regarded as privileged. But, after all, the Royal Aero Club is supposed to be the governing body of the Sport of Flying in the British Empire, and consequently it is within its limited scope very much more of the nature of a Parliament than of a private club.

Also the people who open and take part in the discussions evidently do so with the idea of improving aviation in some way or other, even if only from the point of view of their personal pockets. If the things that were said at these meetings were kept rigorously within the four walls of the room they could hardly be expected to confer any benefit on anybody. For, if anybody did happen to say anything worth while, the progress of aviation would suffer because of the limited audience.

Therefore, on the whole, one thinks that it is better that the speeches should be broadcast to the aeronautical community, at any rate in so far as they contain anything which is worth recording.

One objection to reporting the speeches is certainly that some of those who attend these dinners are shy about saying anything which is likely to appear in print. Some of such people are really shy, and, though they would not mind expressing their views to a small circle of friends, do actually funk getting on their hind legs and talking when they know that whatever they say may be recorded against them.

Others again say that the publication of the speeches prevents some people from speaking their minds openly as they might do if no reports were to be published. This strikes one as being rather a poor argument, because even if one made no notes at the time, and even if people like oneself who are directly connected with newspapers were excluded from the gatherings, anything of a very startling nature which

was said would certainly be reported to us verbally, and it might suffer greater distortion in the process than it does even when transcribed from one's own very imperfect long-hand notes.

Consequently one proposes to place on record, to the best of one's ability, the essence of what is said on these occasions.

THE NEW CHAIRMAN.

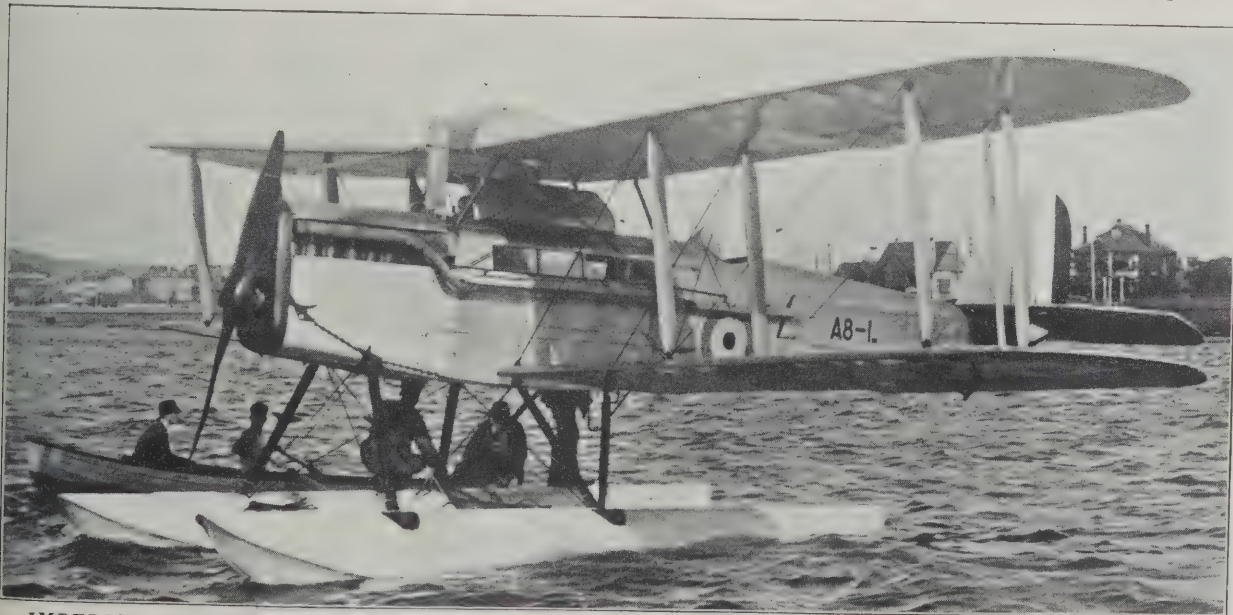
At this particular Dinner the proceedings were very bright. Mr. Handley Page was in his best phillipic form, several speakers spoke sense, and one or two were quite funny. And the Chairman's conduct of the proceedings was a model of how the thing should be done.

When Lord Thomson was mentioned as a possible Chairman for the Club, one had grave doubts about his suitability. Although one knew that he was a particularly good Air Minister and was liked by everybody in the Air Ministry, as well as being respected for the intelligence with which he tackled aeronautical subjects, he was after all a Labour Minister, and though he carried on the schemes of his predecessors without interfering with them, one could never quite dissociate in one's mind the ideas of Labourism and Socialism and Bolshevism. However, one is quite prepared to be a Socialist oneself if one can be sure of an official position which carries with it the private and public use of a Rolls-Royce at the expense of the State.

In his capacity as Air Minister he certainly destroyed a belief which one had cherished for many years to the effect that no professional soldier can possibly make a good political head of a department which is concerned with a fighting Service. But one ascribed his success as Air Minister rather to the fact that he was less of a soldier than of a politician. And it was because he is a politician that one was inclined to mistrust his suitability as Chairman for the Aero Club. Moreover, he is a notable writer not only of books, but for the papers, which, to quote Kipling, "as everybody knows, is worse than serving in a shop or scaring off the crows."

But since the days when one acquired those ideas, at the beginning of Lord Thomson's term at the Air Ministry, one has found excellent reasons for revising all of them. And the last of them was upset when one saw him as Chairman at the Royal Aero Club Dinner.

Lord Thomson is one of the best after-dinner speakers in this country, and when a man is a notably good speaker he



IMPERIAL PATHFINDING.—The De Havilland 50, with Puma engine, on Short floats, used by Group Capt. R. Williams and Flt. Lt. McIntyre, of the Royal Australian Air Force, in their flight over the Pacific Islands.

always knows it himself, and almost always lets other people have the benefit of his knowledge. But on this occasion Lord Thomson became very strictly the Chairman and not the chief speaker, as most people in his position might very well have done under the circumstances. So we lost a very good speech and found that we had acquired the right man in the right place.

Opening the proceedings, he expressed his pleasure at presiding at this first House Dinner of the season in his new capacity as Chairman. He said that he supposed that all members of the Royal Aero Club were interested in aviation (a supposition which produced loud laughter, because of the large percentage of members of the Aero Club who apparently have no interest in aviation whatever) and added that he himself yielded to none in his interest in aviation—which is a very comforting piece of information, considering the number of highly placed Councillors of the Club whose interest in flying is at any rate imperceptible.

Lord Thomson described aviation as being at once a menace and an opportunity, and he called upon Mr. Handley Page to deliver his discourse.

THE OPENING DISCOURSE.

MR. HANDLEY PAGE extended a very hearty welcome to the Chairman on his first appearance and remarked that he might have presided over other councils which were less distinguished than the present gathering but he had certainly never presided over one which was more enthusiastic. His (H.P.'s) intention that evening was to discuss British Air Policy. We might be pessimistic about our position compared with what it was at the end of the War. We had often heard of aviation as a great link with our Empire, a phrase which some in the Royal Aero Club might briefly term "bunk."

He liked to compare Sea Power with Air Power. We ought all to insist on having the same power in the air as we had at sea. We had an important Mercantile Marine and we had evolved the Navy to protect it. Also our politicians had secured sea bases. All the needs of the Navy were filled by our shipbuilding industry. Great Britain was in fact the focus from which all seafaring sprang.

Our position in the matter of air power was quite different. In Civil Aviation we had great possibilities for good, but the most fanatical enthusiast would not claim that Civil Aviation could exist without subsidies.

If we considered air power seriously we must not only consider our Air Force and our air lines, we must look farther ahead. We should then find that we had no air bases. We must have an air policy throughout the Empire based on common speech and common blood. In the past, frontiers had protected nations. To-day no such things existed.

It was of paramount importance to replace machines which were destroyed in time of war. Russia broke in the last War because her supplies failed. To achieve air power we must be in the same position as we were on the sea. Other Powers must base their designs on ours, must draw their supplies from us, and must have their pilots trained by us. Thus we should enlarge our output of aircraft and we should turn potential enemies into certain allies.

When we had got hold of this broad idea we should see what others were doing. The French Government were acting as they were because they had the backing of the French public. Air services of other nations were trained by French pilots, they used French machines, and they made French air power their centre. French military and civil aviation were correlated and each backed up the other.

Germany had hitherto been hampered by the "Nine Rules." So to-day Germany was basing her whole future on air power built on a civil basis. The German people were used to long journeys over land which made it easier for the Government to extend their air power. And the German scheme was to create a kindly regard all over the World towards German aviation. General P. R. C. Groves had given convincing figures in *The Daily Express* recently.

If we organised our Air Force on a small defence policy then our efforts were in vain. We must achieve air power by correlating civil

and military aviation and the manufacturing of aircraft. Our authorities could stimulate manufacturing by re-equipping squadrons with modern aircraft, and by equipping poorer nations with the types which we had just discarded.

Our present system was like using a car till it was worn out and then scrapping it, instead of selling it secondhand after a season's use and buying the most up-to-date type. He believed that the High Authorities at the Air Ministry appreciated this, but battle must be joined with the Treasury.

We were spending £120,000,000 per annum on defence and only £15,000,000 of this was spent on air power, though aircraft were the only means by which we could be attacked. By increasing our air power we could effect real economy.

If we could induce people to think of air power in terms of bases on the territory of friendly nations, as for example Gibraltar, Malta and Aden, among our sea bases, we could run air lines from those bases till Civil Aviation could fly by itself.

We should spend more money on research. And we should insure mass production in time of peace by making aircraft in quantities to supply to other countries. Such a policy depended on our Governments having more courage.

We had heard a lot about milestones on the road of progress, and revolutions. He did not believe in upheavals. Neither auto-giro nor variable airscrews nor even slotted wings would produce a revolution in a day. Progress must necessarily be slow.

We must wake up the country to the need for aeronautical progress. To mix up two Biblical quotations, the state of British aviation suggested "Is it well with the child?" and the answer "He is not dead but sleepeth."

It was possible to mould a national policy by mass psychology. The Royal Aero Club had taken a very big part in forming the present successful Flying Clubs. There were rumours that the Air Ministry intended to cut down the subsidies of these Clubs next year. It would be criminal if they caused those Clubs to shut down and he hoped that pressure would be brought on the Powers That Be to prevent such action.

World's records must inevitably come into our possession if we pursued the right policy. And we must drive that policy into the heads of those at the top. When he had been asked to suggest a title for this address he had thought of using the title of one of Mr. O. Henry's books "Cabbages and Kings," a quotation from "The Walrus and the Carpenter," of Lewis Carroll. But he had been afraid to suggest it lest THE AEROPLANE should misreport him (being a non-advertiser) as talking about "Cabbages in Kingsway."

To summarise his opinions he said, "Seek ye first the right air policy and all the rest shall be added unto you."

THE D.C.A.

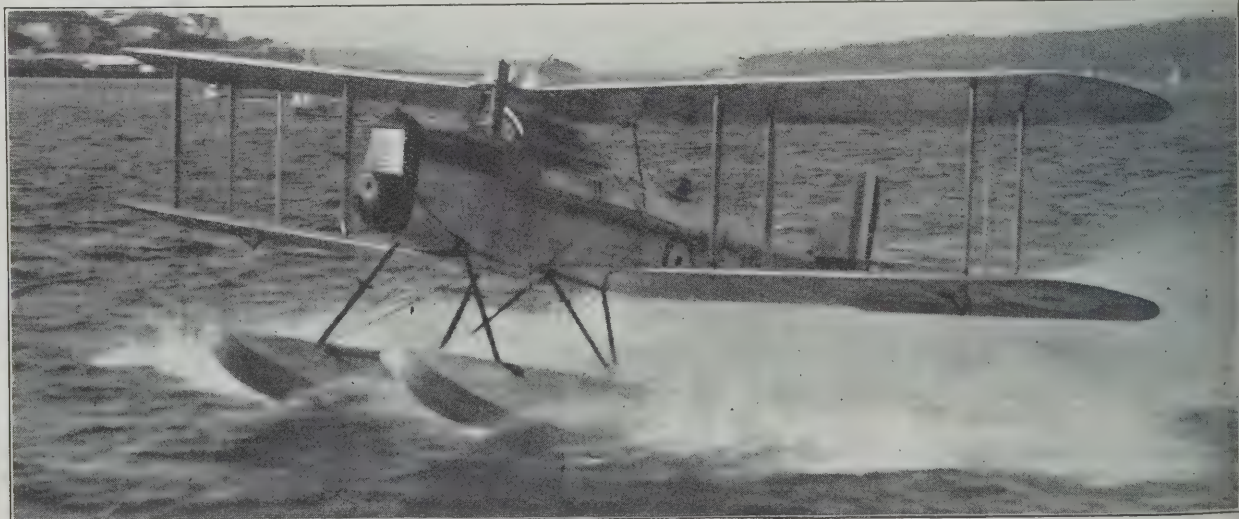
LORD THOMSON, congratulating Mr. Handley Page on his discourse, said that he had taught us how to rise on slotted wings from our dead selves to better things, and he called upon Sir Sefton Brancker for a few remarks. [By the way! Is he Sir Sefton or Sir William? His name is William Sefton, so presumably he received the accolade as Sir William.]

SIR WILLIAM BRANCKER said that, as one of those officials whose inadequacy had been proved, he reminded his audience that Henry VIII and Queen Elizabeth had subsidised their Navies heavily, and that Solomon had sent his fleets out on trade journeys. The Germans could subsidise Civil Aviation as they had no air force to maintain.


As to the subsidies for the Flying Clubs, he said that he was committed to a tour of the Clubs at an early date and thought that it was a good idea to give the impression that their subsidies would be cut off next year, otherwise when he went to see them they would be sure to ask for double subsidies, whereas if they thought they were going to lose their subsidies they might be content with the same amount that they had had this year.

The root of all our troubles was that we were "penny wise pound foolish." The Chinese version of that proverb was, "It is no use going to bed early to save candles if the result is twins." And as the result of not developing our own aviation we had the twin aviation of Germany and France to compete with us.

In spite of that we did produce good aircraft. The Supermarine Swan, a civil machine, produced the Southampton flying-boat, which



IMPERIAL PATHFINDING.—The R.A.A.F. D.H.50 getting off

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was the best of its kind in the World. The Handley Page W.8., a depressing old thing, had produced the excellent Hyderabad bomber. And the Short Singapore Service flying-boat would shortly produce the Short Calcutta from which much was hoped as a civil flying-boat.

He himself agreed with wanting to see foreign pilots trained in this country. Air transport certainly did not pay for itself, but it was worth subsidising. Every business man was just waiting to see the value of air transport proved. Germany was going to it on the commercial side. The country which made a success of civil air power would have sources of production ready in case of war because factories could easily turn over to war types. Subsidies would create air routes.

A GOOD SCHEME.

MR. JOHN LORD suggested another way of pushing Civil Aviation. He said that it was common knowledge that the Air Ministry scheme for an Auxiliary Air Force and an Air Force Special Reserve had been a failure. But it could be made a success by making cheap flying possible.

If, instead of offering prizes, like *The Daily Mail Prize*, for performances on formulae, the Air Ministry offered, say, £50,000 for the purchase of a hundred light aeroplanes at £500 apiece the Trade would produce such machines. And the Air Ministry would probably be able to sell most of those machines to private buyers before they had been delivered by the makers.

MR. C. G. GREY said that he did not believe in bleating for subsidies instead of sitting down and producing things that were saleable. If somebody would produce a reasonable engine at £150 we should soon have the £500 aeroplane. If anybody had suggested in 1912 or 1913 that such a car as the Morris Cowley would be sold at the present-day price he would have been called a damned fool just as he himself was for talking about the £150 engine. But in due course a Morris would arise in the Aircraft Industry and wipe the floor with the rest. [Incidentally, has anybody realised what a Morris would cost if money were at its pre-war purchasing value? It would be about £80.]

MR. C. G. COLEBROOK said that he agreed with Mr. John Lord. We must get the public to realise that Air Power is as essential as Sea Power, though sea-borne supplies, on which we depended, could not arrive without Sea Power. He thought that the overseas British Dominions might be induced to finance their own links in an Imperial air line.

MR. F. L. BARNARD said that we must concentrate on the civil side of aviation because it was a better advertisement than the Service side. The public were much more impressed by seeing air liners full of people than they were by seeing bombing machines. Air line work could be made possible on 365 days in the year if we really got down to it and equipped ourselves with proper "leader-cables" and directional wireless. For half a million pounds spent in that way we could fly every day of the year. Our multi-engined machines were a great step towards safety. And the Argosy was streets ahead of any machine built abroad. The larger the machine was the more it impressed the average man. And all British aeroplanes had an inherent prestige superior to that of foreign machines.

MAJOR R. H. MAYO said that Civil Aviation was like a small boy brought up by elderly parents (the Government). It was about seven years of age and a noisy child. It had learned to fly before it could walk and it had learned to talk before it could fly. Its parents had now got to lay down adequate money for its education. It could not fight its way in the World on £1,000,000 (the subsidy of Imperial Airways Ltd.). He advocated cutting down the obsolete Services, the Army and Navy, and spending five million pounds on Civil Aviation. The sum given to the Flying Clubs as a subsidy was contemptible. The London Club alone trained twenty-five pilots, male and female, up to the end of June. He was sure that when Sir Sefton Brancker visited the Clubs he would find that their subsidy could be multiplied by three.

MR. H. G. SIMMS, of the British Aviation Insurance Group, who, one believes, hails from Belfast though he has spent a great deal of his life in China, suggested that Mr. Handley Page ought to go into Parliament. Speaking as an insurance man he said that if aviation could get safety it could get all the business it wanted.

MR. HERMAN VOLK, formerly with Colonel John Porte in the Gosport Aviation Company, said that though large machines certainly did impress the public the development of Flying Clubs and of cheap machines would do most to convince the public of the uses of aviation.

MR. HANDLEY PAGE, in replying, said that in the matter of the operations of Henry VIII and Solomon he deferred to the ripe experience of the Director of Civil Aviation. When people went to the Air Ministry for help for Civil Aviation they looked for the open palm of hospitality and they met the clenched fist of hostility. He said again that we wanted our Air Power based on the training of other nations—after the manner of the British Navy. We were hemmed in by restrictions so that aviation went round and round in a vicious circle, and it never stopped on the number we had put our money on.

The cheap aeroplane and £150 engine were no use under existing restrictions. Someone interjected the remark that one could fly within three miles of an aerodrome without any certificates of any sort, whereupon Mr. Page retorted that people wanted to get more than three miles from home on a two-seater.

SIR FRANK MCCLEAN thanked Lord Thomson for presiding and said that he knew he would continue his interest in the Aero Club.

LORD THOMSON in closing the proceedings said that he hoped everybody had enjoyed the proceedings and learned as much as he had himself. He wished that he had had such opportunities when in office.

SOME PERSONAL VIEWS.

That being that, one may perhaps be permitted to add a few of the remarks which one would have liked to contribute to the discussion if one were able to acquire the habit of thinking and talking on one's hind legs.

The subject announced for Mr. Handley Page's discourse was "British Aviation," but the general trend of the discourse and the subsequent discussion, as unfortunately seems to be the fashion at so many gatherings where two or three are gathered together in the name of aviation, gave one the

impression that a better title would have been "The Iniquities of the Government." Personally one is coming to the conclusion that we are hearing rather too much about the iniquities of the Government in general and the Air Ministry in particular, and too little about our own imperfections.

Nobody has been ruder to Government departments, verbally or in print, than one has oneself. And one is still of the opinion that if a murrain would descend on the technical departments and compartments of the Air Ministry and would carry off all the senior officials and most of the juniors much would be done towards furthering the progress of British aviation. But one also has a somewhat similar opinion, subject to modifications, about the design departments of the Aircraft Industries of all the World.

We should lose a few very good men in both events. But we should at any rate leave room for youth and enterprise to go ahead. The result would be something like the improvement which was effected in London after the Great Plague and the Great Fire.

Considered at their worst the Government and all its ways, in relation to aviation, have a very salutary effect. The Treasury cramps the Air Force with lack of money and so forces the Air Council to be economical. The Air Staff insist on having aeroplanes, which the pilots can fly properly, and so cramps the style of the technicians who if let alone would produce machines which in theory would be aerodynamically perfect but would be horrible flying machines. The Technical Departments insist on all kinds of silly theoretical notions and so set up barriers which are only overcome by trade designers by means of considerable ingenuity, or gallant defiance, which provides excellent mental exercise.

And one result of this is that the firms which are content to sit down under all these restrictions produce very reliable aircraft without the slightest hint of originality or inspiration about their designs, and the firms which are not so content strike out on their own ideas and produce vastly improved types in open disregard of Air Ministry restrictions. Thus we discover automatically who deserves encouragement for enterprise and ability.

The Finance and Contract Departments hang up contracts and payments, thus affording fresh opportunities for discovering the really enterprising firms who are prepared to start building machines before they receive written contracts and so are able to deliver them and get the money before the end of the financial year.

The Department of Civil Aviation produces all sorts of restrictions and regulations which produce loud wails alike from designers, constructors and users of aircraft such as Flying Clubs and Private Owners. And all these restrictions in the end merely give still more healthy exercise to the people who have to get round the said regulations.

Nobody seems to have struck the basic idea that the whole system of government in this particularly blessed country is founded on the scheme of instituting laws and regulations which cannot possibly be obeyed and then allowing decent people to break them with impunity so long as they break them in a decent way, while the existence of the laws in their impossible form permits those in authority to put the said laws into operation against people who are undesirable in one way or another, although, perhaps, they may not actually break the laws so flagrantly as do people against whom the regulations are not enforced.

By this means, a man who is of real value to aviation may be allowed to fly as and when he pleases on a machine without an airworthiness certificate and without a pilot's certificate for himself, so long as he is behaving properly and is doing work which is useful to the progress of aviation. On the other hand, a man who holds all the necessary certificates but happens to be rather a nuisance, or in some way is not a credit to aviation, can be stopped from flying merely because he has omitted one day to have his log book signed by a ground engineer.

It is a beautiful system. It is based, obviously, on the British Non-Conformist Conscience. And it is admirably suited to the British temperament, that curious temperament which managed to run from 1914-18 quite the most expensive war that ever happened with the smallest percentage of financial graft ever known in any war and with the greatest amount of individual wangling.

The whole art of living under a British Government in any part of the World is to know how to wangle decently and in order. And if only people would stop bleating about laws and regulations in aviation and would settle down quietly to build improved aeroplanes and improved engines, and would merely devote a little intelligence to wangling round the regulations, British Aviation would make a lot more progress.

Various and sundry speakers, including Mr. Handley Page, lamented at length the lack of support accorded to British Aviation by Government finance, either in the way of direct subsidy or in the way of expenditure on research or by the

The advertisement is framed by two vertical decorative borders. At the top, a stylized sun or moon rises over clouds. Below this, the word "FAIREY" is written in a large, bold, serif font, arched over the word "AIRCRAFT", which is also in a large, bold, serif font and arched. In the center, a detailed illustration shows a large naval ship at sea, with a biplane flying above it. Below the ship, the text "THE FAIREY AVIATION COMPANY LTD" is written in a bold, sans-serif font, followed by "HAYES" and "MIDDLESEX" in a smaller font. At the bottom, the initials "M.C.M." are printed.

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financing of one scheme or another. Students of Kipling will remember the famous instance in which Stalky, commanding a small detachment of troops in the desert outside Suakim, went a bit too far and got his troops cut up by the Fuzzies, after which, instead of waiting to be hauled over the coals for going beyond his instructions, he pushed in a chit to Headquarters complaining of the lack of support accorded to his operations in the interior.

That is the way to deal with our laws and regulations. And the sooner everybody learns the trick the better. It is only another side to one of the first principles of War, as laid down by Clausewitz and others, that attack is the best form of defence. Constant complaining is only passive de-

fence. Attack is action. And it is action that is wanted in British Aviation to-day.

Our aerial survey people, the Aircraft Operating Co., and the Air Survey Co., are the shining examples of action. They do not cry out for subsidies or for relaxation of regulations. They merely go where there are no regulations and take payment for services rendered. That is the way to achieve progress in British Aviation. And the same sort of thing can be done at home when somebody sets to work the right way. But, of course, nobody mentioned the aerial surveyors abroad, nor the aerial photographers at home, nor the joy-ride firms, for they manage to succeed without Government help.—C. G. G.

THE KHARTOUM-KISUMU AIR LINE.

On Monday, Nov. 15, a large party of guests, many of them of considerable importance in Central and East African affairs, visited the factory of Short Brothers at Rochester to see the launching of the seaplane Pelican with which Mr. Gladstone and the North Sea Aerial and General Transport Company Ltd. are to carry out the experimental flights between Khartoum and Kisumu in Uganda. The machine is a De Havilland 50 of the familiar "Imperial Tours" type, the floats are the latest thing in Short all-metal production, and the engine is a Bristol Jupiter, Mark VI, and the airscrew is a Fairey-Reed. Certainly no finer combination for the job in hand can be imagined.

The christening ceremony was performed by the Lady Beatrice Ormsby-Gore. Mr. Hubert Broad took the machine off the water with hardly any run against half a gale, climbed it like a scout, performed sundry graceful evolutions and brought it back onto the water with rather less splash than is made by the average duck,—demonstrating what a first-class aeroplane can do in the hands of a first-class pilot.

As a matter of fact the performance was really the joint concern of five aircraft companies. The North Sea Aerial and General Transport Co. is in fact a subsidiary of that pioneer firm, the Blackburn Aeroplane and Motor Co. of Leeds. The machine is De Havilland, the engine is Bristol, the floats are Short and the airscrew is Fairey. If this quintessence of the British Aircraft Industry does not produce success, then Heaven help British Aviation.

Personally one regards the whole undertaking as one of the most important things that has happened in British Aviation. For all our talk of Imperial air lines this is in fact the first bit of line actually to be organised purely by civilian enterprise in the British Empire outside Great Britain. In all new

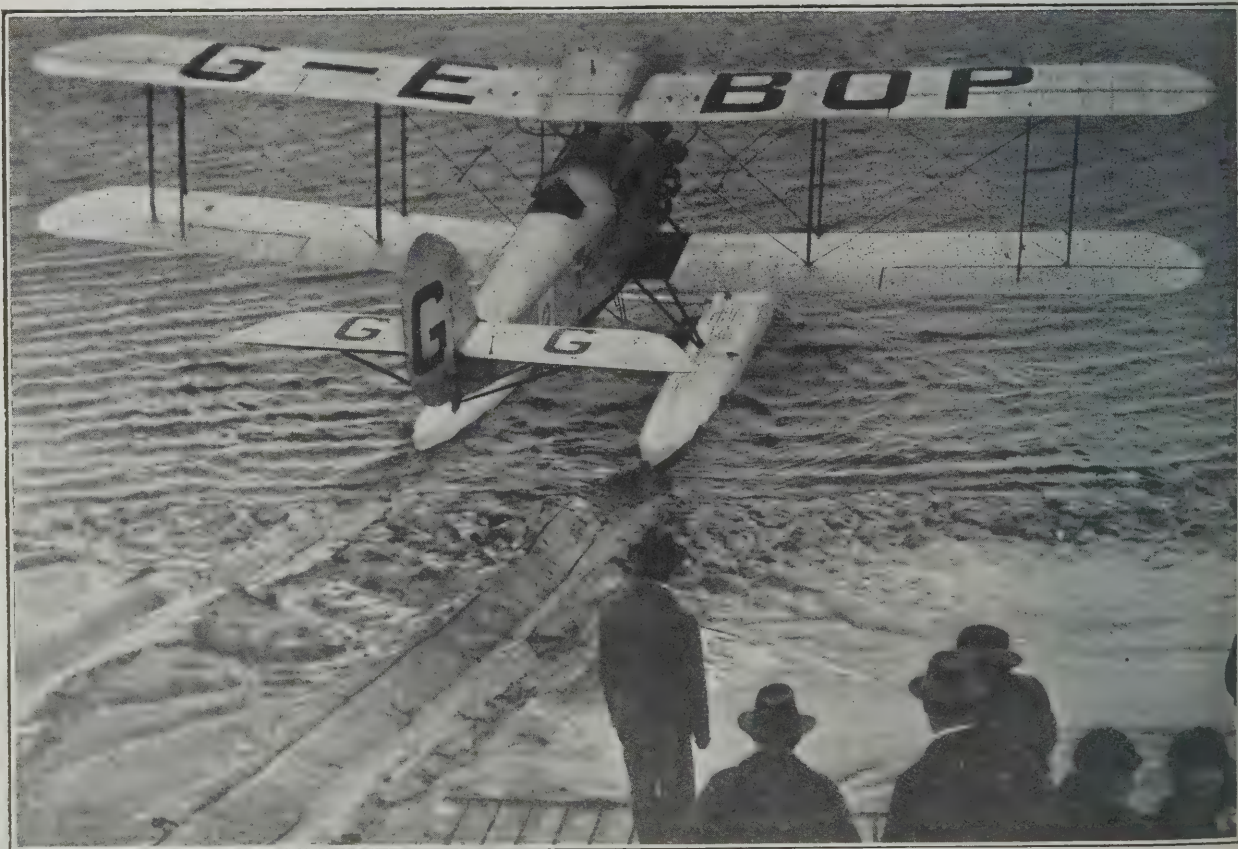
methods of transport, lines of communication have a curious habit of beginning in the middle instead of at either end. The classic example is the little old Stockton-Darlington railway on which was built up the whole of the great North-Eastern Railway of England and ultimately the Great Northern. And one regards the Khartoum-Kisumu line as being precisely such a nucleus.

No praise can be too great for Mr. Tony Gladstone, whose individual enterprise and persuasiveness and persistent argumentativeness have persuaded the Governments of three solid British Colonies to pay for the running of the experiment. And equal praise is due to Mr. Robert Blackburn for having the foresight and financial courage to commit the North Sea Company to put up the bulk of the money for the undertaking.

After the launching ceremony the company adjourned to the historic Bull Hotel at Rochester, where the HONOURABLE WILLIAM GEORGE ARTHUR ORMSBY-GORE, Conservative Member for Stafford, and lately Parliamentary Under-Secretary for the Colonies, proposed the toast of The Undertaking. He said that the day's ceremony laid the foundation for permanent results. The use of seaplanes established the certainty of that route up the Nile, which was most favourable to Civil Aviation. He hoped they would secure the co-operation of all the countries concerned. The North Sea Company itself had put up most of the money and the Colonies, at a Governors' Conference, had agreed to put up the rest. The line would shorten materially the distance of those Colonies from the heart of the Empire.

Mr. W. F. GOWERS, C.M.G., the Governor of Uganda, expressed his gratitude to Mr. Gore for his interest. That Governors' Conference which included Kenya, Uganda and the Sudan, gave their whole-hearted support to the undertaking and to the regular service which would follow. The air was the only possible way of speeding up their communications, and public opinion in Kenya was keenly interested.

He had had twenty-eight years of experience in the Colonies and

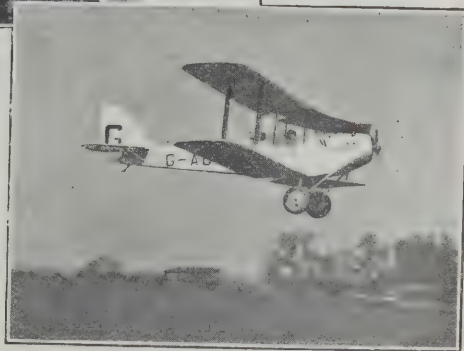
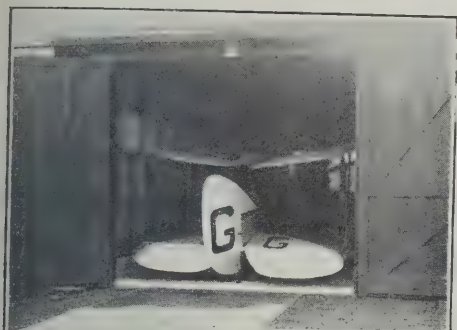


THE QUINTESSENCE OF BRITISH AVIATION.—The Blackburn-De Havilland-Short-Bristol-Fairey "Pelican" being launched through Medway mud at Rochester on Nov. 15.

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"Flight"
Photos.

The illustrations show (1) The "Moth," wings folded, in an ordinary garage. (2) The Wings spread for flight — The Owner-Pilot can spread or fold the wings with ease in a minute or so. (3) Embarking for the journey—the "Moth" will fly over 250 miles without refuelling. (4) The start—you need no special clothing and you are efficiently protected from the weather. (5) Well away and showing a clean pair of heels to cars and trains.

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every improved method of transport had improved the understanding between the Colonies. Roads and railways took a long time to build. The air was the natural means of communication. Great Britain was behind France and Belgium, who had excellent air communications in their African Colonies.

He referred to the fact that the first flight had been made to Khartoum in 1913 on a Short seaplane by Mr. Alec Ogilvie, and recalled that Messrs. Cockerell and Broome, Lieut.-Colonel Van Ryneveld, Major Brand, Mr. Cobham, Wing Cdr. Pulford and Sq. Ldr. Coningham had all made great flights in Africa, but he pointed out that these were stunts, or *tours de force*. That day's lunch marked the beginning of an economic and commercial air line.

New communications were seldom profitable at the start. Roads did not show a financial profit, but that did not stop road-building. He was glad to see the Prince de Croy at the lunch, representing Belgium, and he hoped that its new line would benefit the Belgian Congo, as gold and diamonds now took seventy days to reach Europe, whereas the new line would shorten the time to ten days.

The British Government showed little confidence in air transport, but it was rather the way of British Governments to come in late after a new thing had been proved. He referred to Mr. Gladstone's perseverance and industry in collecting data, and said that he would refrain from praise till the goods were delivered, particularly as he himself would be the first batch of goods. At any rate all connected with the line deserved success.

THE LORD CRANWORTH, a big landowner in British East Africa, said that he calculated that altogether he had spent eighteen months travelling to and from East Africa, and had been seasick most of the time, so he welcomed the prospect of an air line. He hoped to see an aeroplane on every farm in Kenya. Sixteen years ago he himself brought the second car to Kenya and now the country was thick with them. In America people reckoned the importance of a town by the number of automobiles in proportion to the population. In the capital of Kenya they calculated how many cars there were per head of the white population.

The people connected with aeroplanes need not expect to surprise the natives. Everything new that had been brought into the Colonies had been called by the natives "An act of God"—except a bowler hat which was worn by a certain District Commissioner on duty. The new air line would be a permanent link with Home.

MAJOR SIR HUMPHREY LEGGETT, who is a member of the Legislative Council of British East Africa, commended Mr. Gladstone's pertinacity, and the enterprise of the North Sea Company and the support given by the Colonies concerned. He gave examples of the value which the air line would be in saving time, as for example in getting samples of the cotton crop through to the English market and getting samples of goods out from England to the Colonies.

LIEUT.-COLONEL IVO EDWARDS, of the Department of Civil Aviation, said the public had little idea of the true significance of rapid Imperial communication. It would tighten up the outlying portions of the Empire. The servants and disciples of the gospel of aviation held that air services were the intimate concern of every man, woman and child in the Empire.

The psychological effect of severance from home interfered with emigration. The capital of the Empire was centred in London and capitalists could not go gallivanting about looking at business propositions without rapid communication.

Referring to the time-space factor, he said that aviation would bring Australia to the position of Aden, South Africa to Gibraltar, and would place Canada somewhere off the West Coast of Ireland.

When in India preparing figures for air lines he discovered that the cost of laying down proper ground organisation for 2,000 miles of airway was just equal to that of building 15 miles of railway. Airways would pay when the traffic was sufficient. Could anybody imagine a railway paying if only one train a day ran over it?

Aviation would soon grow out of wanting subsidies. Such air services as ran to-day were only a nursery for air lines in which operators and aircraft constructors were learning what was wanted. He congratulated Mr. Gladstone on his ability as an organiser and as a hard fighter.

MR. ROBERT BLACKBURN, speaking on behalf of the Aircraft Industry, and apologising for not being in the Handley Page class as an orator, said that having been brought up in a locomotive factory he was a firm believer in locomotion. That was why the North Sea Company had backed Mr. Gladstone and hoped to organise a permanent service.

MR. GLADSTONE said that he had not done anything for which to be called upon to speak. He had not delivered the goods. All he wanted was the chance to prove the usefulness of the line, and he appealed to anybody who had anything to do with the Central and East African Colonies to send their mail and small parcels by his line.

MR. OSWALD SHORT said he was proud that his firm was associated in this new undertaking with the De Havilland Bristol and Fairey firms. He reminded those present that it was Mr., now Sir, Frank McClean who had ordered and paid for the first machine flown to Khartoum. He felt by intuition, the same intuition on which he had relied for the policy of his firm, that the line was going to be a great success.

Anyhow, the proceedings were a good beginning. No better men and no better machine could be got together for the job. One's only quarrel is with the name of the machine. Perhaps one's readers know the rhyme to the effect that a wonderful bird is the Pelican, his bill can hold more than his interior economy can, they say that his beak can hold food for a week, and it is difficult to see how he does it. Anything less like the bill of a pelican than the beautifully proportioned Jupiter engine cannot be imagined and if the cubic capacity of the body of a D.H.50 were not greater than that of a Jupiter engine it would not be a serious transport proposition. Anyhow, one wishes the whole undertaking every possible success.—C. G. G.

THE AIRWORTHINESS HANDBOOK.

The Air Ministry have just issued as Air Publication 1208 an Airworthiness Handbook for civil aircraft. According to the Introduction this Handbook "is intended to indicate the detailed requirements to be fulfilled by a type aircraft in order to qualify for a Certificate of Airworthiness."

The Introduction goes on to state:—"The technical procedure governing the issue of these certificates is given in Section II of the Air Navigation Regulations, 1922 (A.N.D.3)."

A.N.D.3 has now been specifically superseded by A.N.D.6, issued within the past ten days. A.N.D.6 describes for the first time a new system of classification for aircraft. And the Airworthiness Handbook deals with the requirements under the new classification, which was not in existence at the time when A.N.D.3 was published.

As now issued, this Handbook contains memoranda on the structural design of wooden airscrews, on certain engine installation requirements, and on taking off and landing requirements. There is nothing in it at present concerning the schedule of load factors which will be required under the new scheme of classification—nor is there any guide to the designer concerning the detailed changes which the new scheme will entail.

The handbook is in loose-leaf form, and additions and amendments are promised. It is obtainable from the Stationery Office at one shilling and threepence.

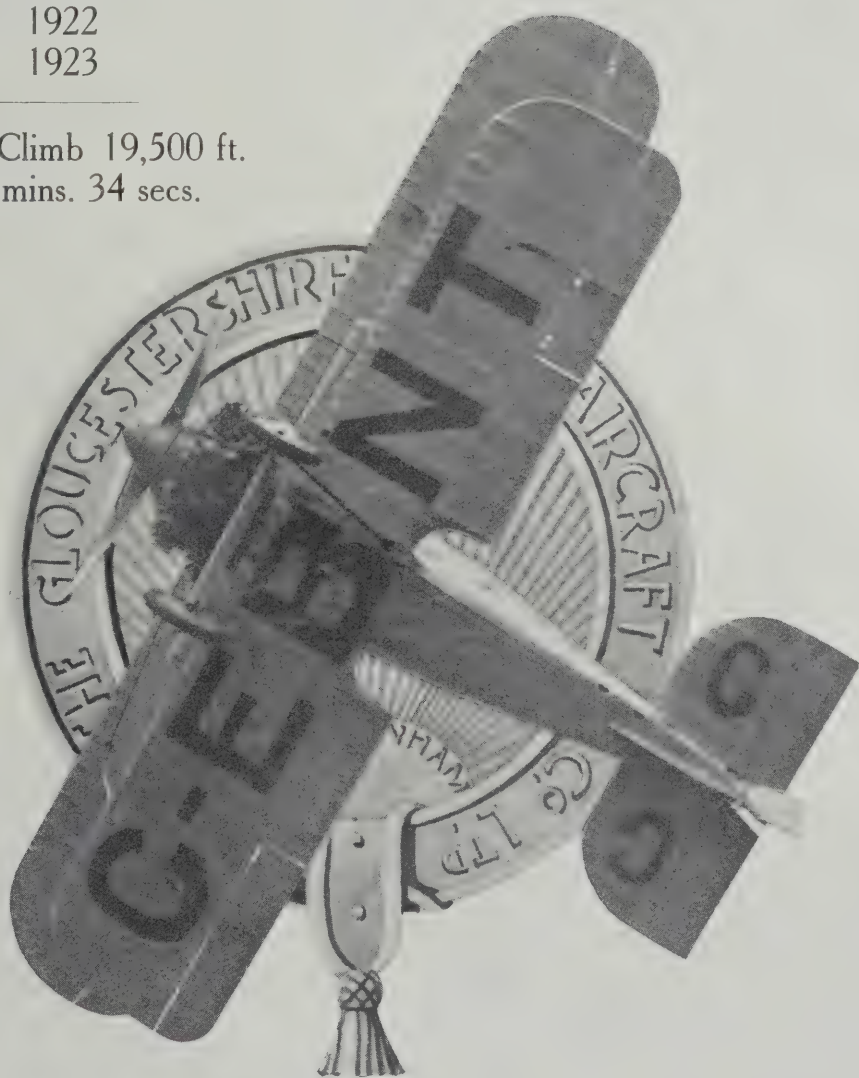


OFF TO AMERICA.—Mr. Kenneth B. Walton's De Havilland Moth, Cirrus engine and Short floats, being tested at Rochester on Nov. 15, by Mr. Broad, with Mr. Mitchell as passenger. This machine is to go to America in the same ship as Sir Alan and Lady Cobham, who propose to stop the liner and fly the machine into New York Harbour. One hopes it keeps fine for them.

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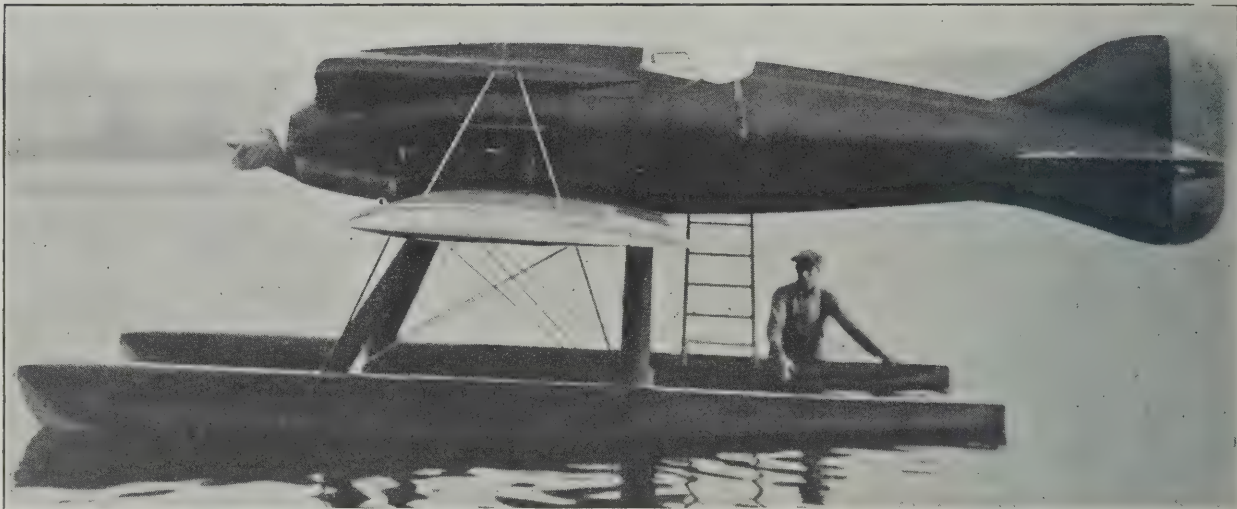
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THE SCHNEIDER TROPHY: ITALY'S VICTORY.



THE ITALIAN VICTOR.—The Macchi 39, Fiat A-S.2 engine, 800 h.p., which made a speed of 246.5 m.p.h. over the whole course of 350 kms. (217 miles). (The ladder is not part of the structure.)

On Nov. 13, the ninth contest for the Jacques Schneider Trophy was held at Hampton Roads, Virginia, and was won by Major Mario di Bernardi, representing Italy, at an average speed of 246.5 m.p.h.

THE AEROPLANE tenders to our Gallant Allies of the War 1915-18 the congratulations of all British Aviators on this International Success achieved so largely by the driving power of the Great Mussolini. The *Regia Aeronautica*, the Macchi Firm, and the Fiat Company deserve full credit for their splendid achievement.

In the nine contests, Great Britain has won the trophy twice, Italy three times, the United States twice, France once and one contest, that held at Bournemouth in 1919, was disallowed owing to all competitors having missed a turning point in thick weather.

On that last occasion Italy, whose representative put up the fastest time, was permitted to hold the Trophy and to organise the following year's competition at Naples.

The competition rules lay down that for a country to obtain permanent possession of the Trophy it must be won by that country three times in five years. Italy's victories were in 1920 and 1921, and the United States won the Trophy in 1923 and 1925, the 1924 contest having been called off owing to the lack of challengers. It will be seen, therefore, that had the United States won this year the Trophy would have become their permanent property. The result of Italy's victory means that next year the contest will be held over Italian waters.

For this year's contest two teams, representing the United

States, the holder of the Trophy, and Italy, the sole challenger, competed.

The American team consisted of three Curtiss R3C type biplane seaplanes, similar to those used last year. The machines were, however, fitted with an improved type of float, designed by the Naval Bureau of Aeronautics and built by the Curtiss Company.

Each of the three machines were fitted with different engines, the R3C-2 with a 600 h.p. Curtiss V-1400 was the identical machine used by Lieut. Doolittle last year, the R3C-4 had a new 700 h.p. Curtiss V-1550 engine, and the R3C-3 had a new 700 h.p. geared Packard engine developed from the 2A-1500 type. The two Curtiss-engined machines were equipped with the new Curtiss-Reed forged airscrews and the Packard-engined machine with a two-bladed Standard Steel metal airscrew. Another interesting feature of the machines was the installation of auxiliary wing-type radiators of narrow chord to the front-float struts.

The American pilots were Lieut. G. T. Cuddihy, U.S.N., Lieut. W. G. Tomlinson, U.S.N., and Lieut. C. F. Schilt, U.S.M.C.

The Italian team consisted of three Macchi 39 monoplanes, all fitted with 800 h.p. Fiat A-S2 engines. These machines, of exceptionally good design, incorporated all the good points of last year's competitors. The Italian pilots were Major Mario di Bernardi, Lieut. Adriano Bacula and Lieut. Arturo Ferrarin, all of the Italian *Regia Aeronautica*.

In preliminary tests, Lieut. F. H. Conant attained a speed of over 250 m.p.h. over two runs of a 4½-mile course on the



THE AMERICAN LOSER.—The Curtiss R3C-4, Curtiss V-1550 engine, 700 h.p. The pilot on the float is the late Lieut. F. H. Conant, U.S.N., who was killed in a practice flight on another machine. On the machine in the picture he had made a speed of over 250 m.p.h. on a straight short course.

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Curtiss V-1550-engined R3C-4. This officer unfortunately lost his life later while making a flight on a training machine. Lieut. G. T. Cuddihy on the Packard-engined R3C-3 reached a speed of 256 m.p.h. over a measured course.

The eliminating trials, which were due to begin on Nov. 10, were postponed by bad weather until Nov. 12.

From such little information as is available concerning these tests, all machines were successful in getting through them, although one report states that Lieut. W. G. Tomlinson crashed in landing on the Packard-engined R3C-3. As however, in a subsequent message, this machine was reported to have taken part in the actual contest one can only assume that the accident was exaggerated by the reporting agent.

The competition, postponed from Nov. 11, was held on Saturday, Nov. 13, under ideal weather conditions.

The triangular course, 50 kms. round, had to be covered seven times, making a total distance of 350 kms. (217.35 miles).

Major Mario di Bernardi (Italy) covered the course at an average speed of 246.496 m.p.h., thus beating the speed of 232.573 m.p.h. put up last year by Lieut. J. H. Doolittle, A.C., and also the World's Seaplane Speed record of 245.7 m.p.h. made by the same pilot.

Lieut. C. F. Schilt, U.S.M.C., was second on the Curtiss V-1400-engined R3C-2, used by Lieut. J. H. Doolittle last year, at a speed of 231.363 m.p.h. Lieut. A. Bacula (Italy) was third, at 218 m.p.h., and Lieut. W. G. Tomlinson, U.S.N., was fourth, at 137 m.p.h.

Lieut. Cuddihy, U.S.N., on the Packard-engined R3C-3, was forced to alight after covering six laps at 239 m.p.h. and Lieut. A. Ferrarin (Italy) gave up after covering three laps at an average speed of 238.358 m.p.h.

This result may be considered as very satisfactory in so far as it keeps the competition open for two years at least, and thus makes it possible that some of the new British high-speed seaplanes, which ought to have been ready for this year's contest, may be able to take part in that event. In another way, however, the result may afford occasion for scathing comment upon the attitude taken up by those concerned with British Aviation after the British defeat in the 1925 race.

It may be remembered that in that year the American winner averaged 232 odd m.p.h., with Mr. Broad on the Gloster III second at 199 m.p.h., and the Italian competitor, Signor de Briganti, third at a speed of 168 m.p.h. The British machine was 33 m.p.h. slower than the winner, and it was held by the Air Ministry, the Aero Club and others that there was no prospect whatever of our making enough progress in one year to justify our attempting to overtake the American lead.

The Italians, who were just about twice as far behind, have succeeded in making, since January last (that is to say in seven months, as their machines were ready for test in September), just twice the progress that we were told we could not possibly make in a year. But of course there is a difference between a Mussolini and an Air Ministry.

The Macchi Company and Ing. Castoldi, the firm's chief designer, deserve every congratulation for their well-deserved success. To achieve this success, they, with broadness of mind, incorporated all the good points of previous high-speed aircraft in a design which is a very complete departure from their previous aircraft policy, that is, the development of the flying-boat.

To have obtained 168 m.p.h. with a flying-boat fitted with a standard Curtiss D.12 engine and a wooden airscrew as they did last year, was in itself an achievement. The production of a high-speed float monoplane by a firm which has previously specialised solely on flying-boats has a parallel in this country, when last year the Supermarine Aviation Works Ltd. produced the S.4 which within a month of its production put up a short-lived World's Speed Record of 364.924 km.p.h. (226.6 m.p.h.).

Thanks to Italian enterprise, to which all honour is due, we have a chance of winning the Trophy in 1928. It will be interesting to see what we are going to do about it.

The next contest for the Schneider Trophy cannot take place until 1928. At the meeting of the *Fédération Aéronautique Internationale* at Rome in October it was resolved that in the event of Italy winning the Trophy this year the contest should thereafter take place once every two years and not once a year.

This seems to stop America from winning outright if the U.S. team should win in 1928, for then America will not have won three times in five years. Presumably this rule will have to be altered to make it read "three times in five contests."

The idea of altering the period was to give the various competing countries time in which to develop machines capable of beating the performance in the last contest. Whether this will be of any benefit to Great Britain seems doubtful, seeing that Italy achieved so much in seven months while our machines, which were to have broken World's records a month ago, are not yet ready. But at any rate a race in 1928 will give the Germans and the French an opportunity of competing without much expense, so that at any rate the contest will be worth seeing.

THE ROYAL AERONAUTICAL SOCIETY.

It is announced that the Pilcher prize for the best paper read before the students' section of the Royal Aeronautical Society has been awarded to Flg. Off. R. L. Ragg for his paper on "Experimental Flying from the Pilot's Point of View." A cash prize given by Lt. R. V. de Aboima, Brazilian Navy, an Associate Fellow of the Society, has been added to the Pilcher prize. Both prizes were presented at a meeting of the students' section held on Nov. 11.

At this same meeting Mr. Handley Page gave an address on "The Future of Aviation."

On Thursday, Nov. 18, Mr. R. S. Capon will read a paper before the R.Ae.S. on "Methods of Performance Testing and Analysis," at the rooms of the Royal Society of Arts, Jahn Street, Adelphi, at 6.30 p.m.

It is announced that the title of the lecture to be given on Dec. 2 by Mr. P. B. Henshaw, Technical Director of Kayzer Ellison and Co. Ltd., has been changed from "Alloy Steel for Aero Work" to "Valve Steel." This lecture will be given at the rooms of the Royal Society of Arts, John Street, Adelphi, at 6.30 p.m. Col. The Master of Sempill will take the chair.

A visit of members to the works of the Fairey Aviation Works, Hayes, has been arranged on Saturday, Nov. 20. A train leaves Paddington for Hayes at 9.20 a.m., arriving at Hayes at 9.42, and the party meets at the works at 10 a.m. sharp. Members wishing to join the party are asked to notify, as soon as possible, Mr. Scott Hall, Hon. Sec., Students' Section, 7, Albemarle Street, W.1.

A party of members is to be organised to visit the Paris Aero Show. The party will leave on Dec. 2. Members wishing to join should notify the Secretary at once.

I.Ae.E. AWARDS.

At a Council Meeting of the Institution of Aeronautical Engineers held on Nov. 4 it was decided that the medal which Sir Charles Wakefield has presented to the Institution shall be awarded annually in January to the designer of the apparatus or invention which, in the estimation of the Council, has done most towards making flying safer.

The award is at the discretion of the Council, and can be awarded to any person whether a member of the Institution or not.

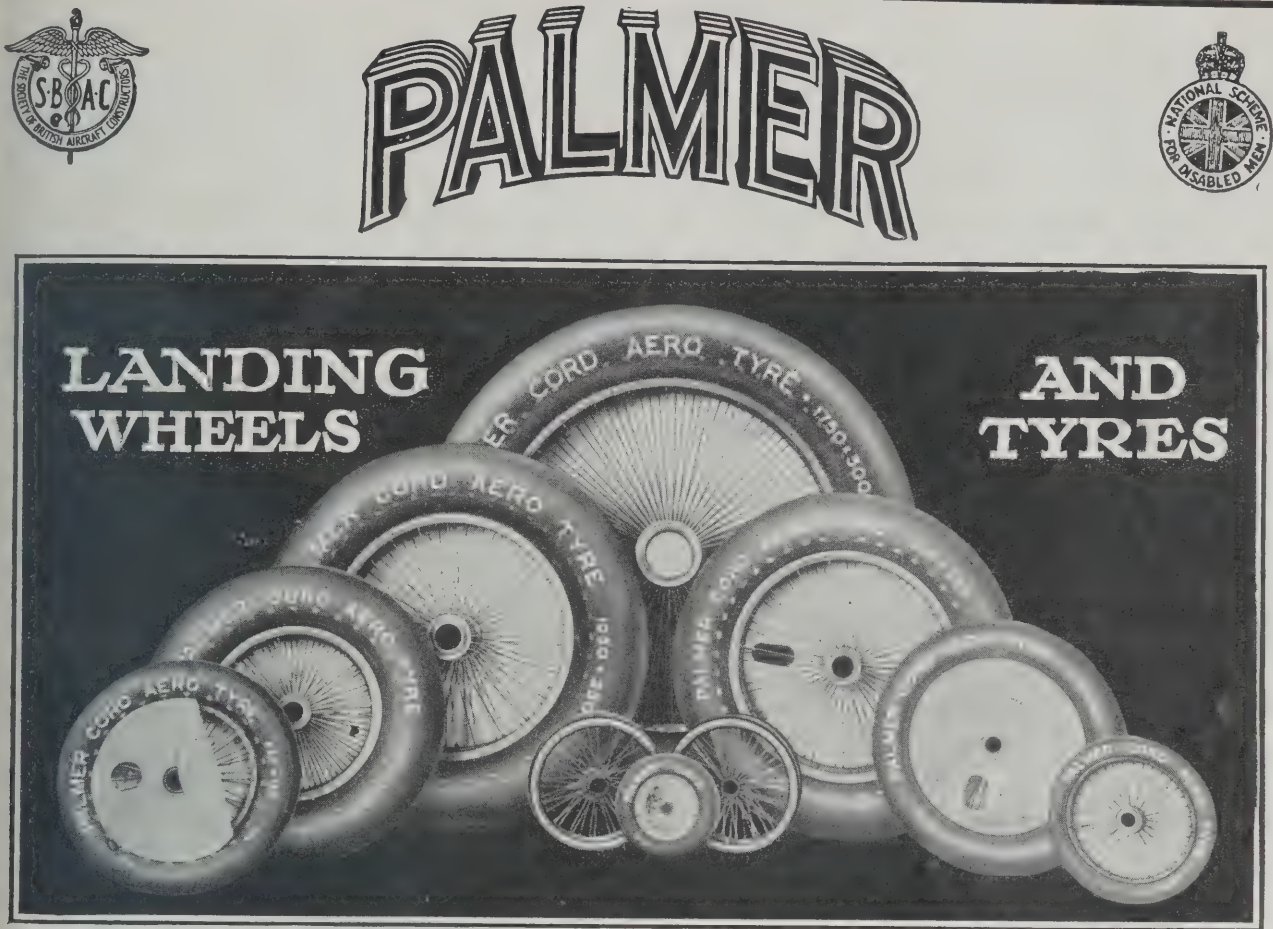
On Friday, Nov. 19, the Institution is holding a Dinner at Kettner's Restaurant at which the Taylor Medal will be presented to Capt. W. H. Sayers, Technical Editor of *THE AEROPLANE*. Dinner will be at 8 p.m., and the price of tickets exclusive of wine is 12s. 6d. each. There will be dancing in the restaurant after dinner.

A RUSSO-GERMAN AGREEMENT.

A contract dealing with the development of the Derulft has been signed in Moscow whereby the Derulft will operate the Berlin-Moscow service instead of the Koenigsberg-Moscow route.



A SCHNEIDER TEST.—One of the Curtiss racers alighting.



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|---------------|-------------|----------------|-----------|-----------|-------------|--------------|----------------|-----------|-----------|-------------|--------------|----------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| 375×55 | 168 | m/m 111.12 | m/m 25.4 | m/m Central | 700×100 | 112 | m/m 150. | m/m 38.09 | m/m Central | 1000×150 | 210 | m/m 185. | m/m 60.32 | m/m Central |
| 300×60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000×180 | 148 | 220. | 80. | Central |
| 450×60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650×125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575×60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900×230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750×125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650×65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100×220 | 134 | 220. | 66.67 | Central |
| 800×75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800×150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975×225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 133 | 250. | 80. | Central |
| 700×75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250×250 | 154 | 304.8 | 101.6 | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 115 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500×300 | 126 | 304.8 | 152.4 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | 1750×300 | 139 | 400. | 152.4 | Central |
| 700×100 | 77 | 178. | 44.45 | 132/46 | 1000×150 | 167 | 185. | 55. | 125/60 | " | 191 | 350. | 150.3 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | 1750×350 | 193 | 400. | 125. | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | | | | | |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

Nov. 9.

GENERAL DUTIES BRANCH.—Air Commodore A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., is appointed Director of Personal Services, Air Ministry, vice Air Vice-Marshal C. T. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C. (Nov. 1); Air Commodore J. L. Forbes, O.B.E. (Deputy Director of Armament), is appointed Director of Technical Development, Air Ministry, vice Air Commodore F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O. (Nov. 1).

The following are granted perm. comms. in the ranks stated (Nov. 1):—FLT. LT.—F. G. A. Robinson. FLG. OFF.—A. Leach, M.C.

PLT. OFF. A. R. Feather is promoted to the rank of FLG. OFF. (Oct. 14); PLT. OFF. on probation H. D. Gunton is confirmed in rank (Oct. 22); FLT. LT. A. T. Laing is restored to full pay from half pay (Oct. 23).

The following are transferred to the Reserve: Class A.—FLT. Lts.—L. C. Shoppee, D.S.C. (Nov. 10); W. Jones, H. C. Todd, W. J. Umpleby (Nov. 11). FLG. OFFS.—J. H. Page (Nov. 8); H. P. Morris, G. H. Rawlinson (Nov. 13). Class B.—FLT. LT.—C. H. Nunn (Nov. 11). Class C.—FLT. LT.—E. W. Simpson (Oct. 24).

FLT. LT. H. C. Black is transferred to the Reserve, Class A (Oct. 28) (substituted for notification in the Gazette of Oct. 26); PLT. OFF. W. T. Jones resigns his s.s. comm. (Nov. 10).

PLT. OFF. A. H. Frost is dismissed the Service by sentence of General Court Martial (Oct. 25).

STORES BRANCH.—P. H. Wilcox is granted a perm. comm. as a PLT. OFF. on probation with effect from Oct. 30, and with seny. of Oct. 9.

The following are transferred to the Reserve Class B (Nov. 11): FLT. LT.—E. P. Terry. FLG. OFF.—E. J. Newman, M.B.E.

MEDICAL BRANCH.—Temp. Capt. E. A. Wheeler, General List (Army), Dental Surgeon, is granted a temp. comm. as a FLT. LT. on attachment to the R.A.F. (Oct. 1). He will continue to receive emoluments from Army sources; FLT. LT. J. J. Boyle (Capt., Army Dental Corps), relinquishes his temp. comm. on return to Army duty (Oct. 1).

RESERVE OF AIR FORCE OFFICERS.—The following FLG. OFFS. relinquish their comms. on completion of service:—R. G. Lawson (May 29); A. F. Warner (Sept. 12); C. F. D. Evans (Oct. 23); O. A. P. Heron, D.F.C. (Nov. 7). FLG. OFF. H. J. Lucas is transferred from Class B to Class C (Nov. 9).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be PLT. OFF.—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—T. Courtis (Nov. 9).

Appointments.

Week ending Nov. 15.

GENERAL DUTIES BRANCH.—Air Vice Marshals Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., to H.Q., Iraq, pending taking over command, 3/11. T. I. Webb-Bowen, C.B., C.M.G., to H.Q., Egypt, pending taking over command, 5/11.

Group Captain F. W. Bowhill, C.M.G., D.S.O., to H.Q., Iraq, for Technical Staff duties, 11/10.

Wing Commanders J. H. S. Tyssen, M.C., to Station H.Q., Tangmere, to command, 23/11. C. C. Durston, to No. 21 Group H.Q., West Drayton, for Air Staff duties, 16/11.

Squadron Leaders E. B. Beauman, to R.A.F. Depot, Uxbridge, 1/11. J. B. Cole-Hamilton, to Air Ministry (Deputy Directorate of Manning), 1/11. R. D. Oxland, to No. 503 (Bombing) Sqdn., Waddington, 5/10. K. C. Buss, to H.Q., Iraq, 12/11.

Flight Lieutenants J. McBain, D.F.C., to No. 5 F.T.S., Sealand, 5/11. G. R. Oliver, to Electrical and Wireless School, Flowerdown, 15/11. J. Bussey, to School of Photography, S. Farnborough, 5/11. W. J. Millen, to No. 1 F.T.S., Netheravon, 7/11.

Flying Officers W. E. Purdin, to No. 1 F.T.S., Netheravon, 22/11. F. L. Collison, to No. 39 Sqdn., Spittlegate, 17/11. G. P. H. Carter, to No. 25 Sqdn., Hawkinge, 9/11. E. S. Burns, to R.A.F. Station, Donibristle, 18/11. E. V. H. Hudson, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 3/10. C. J. Stone, to No. 24 Sqdn., Kenley, 19/11. E. T. St. M. Brett, to No. 5 Arm. Car Coy., Iraq, 15/10. C. G. C. Woledge, to Station Commandant, Basrah, 23/10. F. E. R. Dixon, M.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 2/11.

Flying Officers F. Fazey, to No. 1 School of T.T. (Apprentices), Halton, 9/10. G. J. Davies, to R.A.F. Reception Depot, West Drayton, 26/10.

Pilot Officer C. S. Horne, to No. 1 School of T.T. (Apprentices), Halton, 27/10.

MEDICAL BRANCH.—Flight Lieutenants (Dental) J. R. Williams, to H.Q., Cranwell, on appointment to a Temp. Comm., 1/11. C. P. Barber, to Basrah Combined Hospital, Iraq, 18/10. T. V. O'Brien, M.B., to Station Commandant, Hinaidi, 16/10. G. P. O'Connell, M.B., to H.Q., India, 17/10.

Flying Officers G. J. Griffiths, to Basrah Combined Hospital, Iraq, 14/10. D. B. Smith, M.B., and F. B. C. L. B. Crawford, M.B., to R.A.F. British Hospital, Iraq, 16/10. J. McM. Wilder and R. J. K. Chattey, to Station Commandant, Hinaidi, 16/10. B. L. Edwards, M.B., and E. A. Aslett, to Station Commandant, Basrah, 14/10.

STORES BRANCH.—Flight Lieutenants T. G. Bowler, to Station H.Q., Tangmere, 23/11. E. H. Eldridge, to School of T.T. (Men), Manston, 26/10. T. A. G. Hawley, to No. 1 School of T.T. (Apprentices), Halton, 15/11. A. W. Turner, to R.A.F. Depot, Egypt, 24/10.

Flying Officers R. M. Taylor, M.C., to No. 605 (County of Warwick) (Bombing) Sqdn., Castle Bromwich, 5/10. A. M. Reidy, to No. 2 Stores Depot, Altrincham, 23/10. F. D. D. Gaussen, to H.Q., Cranwell, 1/11.

ACCOUNTANT BRANCH.—Wing Commander C. P. Ogden, O.B.E., to H.Q., Coastal Area, 15/11. Flight Lieutenants C. H. Moore, to H.Q., Egypt, 25/10. H. W. Capener, to R.A.F. Depot, Egypt, 21/10. Pilot Officer H. Crowther, to No. 12 Sqdn., Andover, 8/11.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident at South Farnborough, Hampshire, to a Bristol Fighter of No. 4 Squadron, South Farnborough, on Nov. 9,

PLT. OFF. Cyril Vernon Mossman, the pilot of the aircraft, and No. 364117 AC.2. Cecil Herbert Hayward, were killed.

The Air Ministry regrets to announce that as the result of an accident at Eastchurch, Kent, to a D.H.9a of No. 207 Squadron, Eastchurch, on Nov. 11, No. 315176 Sjt. (Pilot) George Frederick Taylor, the pilot of the aircraft, and No. 364039 AC.2. Percy Charles Hinton, were killed.

The Air Ministry regrets to announce that as the result of an accident at Castor, Northampton, to a D.H.9a of the R.A.F. (Cadet) College, Cranwell, on Nov. 12, Flight Cadet David Gam Harcourt Wood, the pilot and sole occupant of the aircraft, was killed.

Armistice Day.

Among the troops which formed the Guard of Honour round the Cenotaph for the ceremony on Armistice Day was a detachment of 200 men of the Royal Air Force from the R.A.F. Depot, Uxbridge, under Sq. Ldr. A. R. C. Cooper, R.A.F. The Last Post was sounded by trumpeters of the Royal Air Force.

A short, informal ceremony took place at 11.45 hours on Armistice Day, at the R.A.F. Memorial on the Embankment. Flowers were placed on the Memorial on behalf of the R.A.F. by Air Vice Marshal Sir Philip Game, K.C.B., D.S.O., R.A.F., Air Member for Personnel on the Air Council; on behalf of the Government and people of Australia by FLT. LT. J. R. Bell, Australian Liaison Officer; on behalf of the R.A.F. Memorial Fund by Lieut.-Col. W. S. Burch; and on behalf of the Women's Royal Air Force Old Comrades' Association by a member of the Association.

A General Court Marshal.

A General Court Martial for the hearing of charges against five officers of the R.A.F. stationed at Duxford was held at Duxford on Nov. 8, 9, 10 and 11. The President of the Court was Group Captain N. D. K. MacEwen, C.M.G., D.S.O., Deputy Director of Training. Mr. P. Sutherland Graeme, C.B.E., was appointed Judge Advocate, and FLT. LT. G. S. Marshall, O.B.E., appeared to prosecute.

The defendants were:—FLT. LT. A. C. Randall, D.F.C., FLT. LT. P. A. de Fontenay, D.F.C., FLT. LT. C. R. Smythe, FLG. OFF. H. S. Davidson and PLT. OFF. J. E. Welman.

The case against FLT. LT. Smythe was taken first. There were five charges against him under the Air Force Act. The first was that the defendant had instructed the mess clerk to enter wines supplied from the mess to the order of one officer against the account of another officer. Another charge referred to the incorrect returns of outstanding wine bills sent to the C.O., and another had to do with failing to inform the C.O. of the return by the bank of a cheque drawn in favour of the mess. The defendant was found *not guilty* on the first charge only.

FLT. LT. Randall was charged with receiving a sum of money which it was his duty to place to the credit of the sergeants' mess and applying this money to his own use. There was an alternative charge of so negligently performing his duty as to cause a loss to the mess. There were six other charges against FLT. LT. Randall in connection with mess bills. The defendant was found *not guilty* on the first charge only.

FLG. OFF. H. S. Davidson was charged with making a false statement, while secretary to the officers' mess, to the C.O. He was further charged with improperly managing the cash transactions of the officers' mess and other irregularities. FLT. LT. Marshall said that there was no suggestion that the defendant had been guilty of fraud. There were five charges against PLT. OFF. J. E. Welman, including two charges alleging scandalous conduct. He was also charged with handing cheques to the mess secretary which he had no reasonable grounds to believe would be honoured, and with absenting himself without leave. The defendant was found *not guilty* of the two charges alleging scandalous conduct.

FLT. LT. de Fontenay was charged with fraudulently misapplying sums of money belonging to the officers' mess. He was further charged with using insubordinate language to a superior officer when placed under arrest. The defendant was found *not guilty* on the first charge.

The sentences on all these officers will be promulgated in due course.

King's Regulations.

Amendment List No. 21 to Air Publication 958 (*King's Regulations and Air Council Instructions for the Royal Air Force*) dated August, 1926, is substituted for the whole of Chapter XII in the original volume. This chapter contains all the regulations relating to flying, and the Amendment shows a general tightening up of those rules which affect the safety of the crews of Service aircraft both in the air and on the ground.

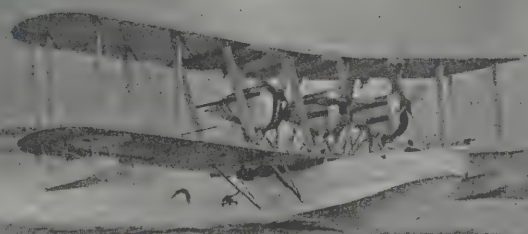
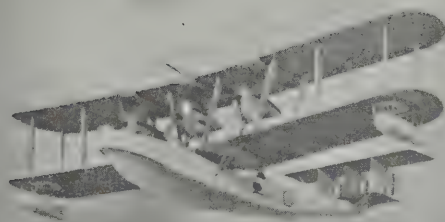
A comparative table at the end of the Amendment List shows the numbers of the paragraphs in the 1924 edition and the corresponding paragraphs in the Revised Version.

The new paragraphs refer to (643) Overloading of Aircraft; (701) Duties of Signals Officer; (702) Signals equipment in Aircraft; (706) Duties of the Armament Officer; (713) Duties of the Parachute Officer; (714) Parachutes, including Regulations for Jumping; (721) Parachute Log Books; (722) Compass Log Books; (738) Qualifications for First Pilot.

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A Maker of History.

The London Gazette of Nov. 2 notifies the fact that Flight Lieut. D. S. Jillings, M.C., has retired from the R.A.F. with the rank of Squadron Leader. By this retirement the R.A.F. loses not only a very valuable officer but a man who is entitled to a place of his own in history.

Serjeant-Major Jillings, as he was at the outbreak of war, was not only the first British soldier to be wounded in the War, 1914-18, but he was authentically the first man in the World to be wounded by hostile action in any aircraft in war.

Serjeant Jillings was one of that wonderful little collection of N.C.O.s who were brought into the R.F.C. from the Guards and crack infantry regiments by Lieut. Basil Barrington-Kennett, of the Grenadier Guards, as Adjutant of the R.F.C. in its earliest days, to instil a proper spirit of law, order and discipline into the assorted mechanics and garage hands who enlisted in the Flying Corps.

On the outbreak of War he went to France with the historic first four Squadrons. As an old and experienced soldier he was taken as observer by Lieut. Maurice Noel, The King's (Liverpool) Regiment and No. 2 Squadron, R.F.C., on almost the first reconnaissance, on Aug. 22.

At that time nobody knew what was the proper height at which to do reconnaissances and it was not till some weeks later that it was discovered that 8,000 feet was the lowest limit for safety against rifle and machine gun fire, and that from that height it was possible to recognise troops on the ground. In those first few days of war reconnaissance was done at a height of only a few hundred feet. Consequently, when flying South East of Ath in Belgium Serjeant-Major Jillings was hit in the leg by a rifle bullet, thus acquiring the historical distinctions aforementioned.

After recovering from his wound Serjeant-Major Jillings continued to do excellent work with the R.F.C., and not long afterwards was given a commission in an infantry regiment, from which he was seconded to the R.F.C. without interruption of his service in the Flying Corps. In those days there were no Permanent Commissions in the R.F.C. as such. Subsequently "Jillo," as he was called throughout the Flying Corps, was promoted to Captain and so in due course became a Flight-Lieutenant, R.A.F. Not being himself a pilot, and being presumably over age for promotion, he now retires from the R.A.F. with the well-deserved rank of Squadron Leader.

Everybody who has met him holds him in the highest regard and he will carry with him in his retirement the heartfelt good wishes of thousands of officers and men who have served with him and under him.—C. G. G.

THE IMPERIAL DEFENCE COLLEGE.

The Times of Nov. 10 states:—

The new Imperial Defence College comes into active being on Jan. 1, when the initial course of study begins under Vice-Admiral Sir Herbert Richmond. The question of co-operative study in defence has been before the delegates of the Imperial Conference in relation to the quotas of officers from the Dominions, who are to come together with the home contingent for the first general survey of the field of work. The Navy, Marines, Army, and Air Force will all be represented in this first attempt at laying the basis for a combined general staff for the whole Empire. The ground has been carefully surveyed for several months past in order that a sound foundation may be laid for the combined study of Imperial defence by all concerned at home and overseas. The students assemble in London next month to the number of 30, and each of the three Services will in turn supply the commandant. The next election will be from the Army, and each Service will have an instructor at the college. The staff is in process of selection. The college will be in close touch with departmental policy, and will also bring within its survey general policy as applied to the whole, and this will necessitate the appointment on the staff of a civilian liaison officer.

In an Editorial reference to the Imperial Defence College, The Journal of the United Service Institution of India, for October, states that each course will consist of 30 students, five from each of the Services, five from the Civil Service, and the remainder from India and the Dominions. India is sending two Army Officers to the first course. Army students are to be p.s.c. officers of the substantive rank of Major. The first course will last a year, though it may be necessary to extend this period for later courses.

The Air Ministry has already announced the Group Captain P. B. Joubert de la Ferté, C.M.G., D.S.O., p.s.a., has been appointed for duty as R.A.F. Instructor.

The Imperial Defence College will be at 9, Buckingham Gate, S.W.1.

A GERMAN PROJECT.

It is rumoured that the Deutsche Luft Hansa are planning to operate a flying-boat service between the Kiel Canal and the mouth of the Thames during the coming spring. The company has acquired the Dornier Super-Wal (two 650 h.p. Rolls-Royce Condor engines), and a further five have been ordered.

THE R.A.A.F. PACIFIC FLIGHT.

Group Capt. Williams, D.S.O., O.B.E., Flt. Lt. I. E. McIntyre, O.B.E., A.F.C., and F.S. Frist, R.A.A.F., who were attempting to fly from Melbourne to Samoa through the South Sea Islands on a D.H.50a seaplane, have abandoned their flight at Roviana, in the Solomon Islands group.

On arrival at Roviana it was found that a leak had developed in the engine water jackets, and no spare parts being available locally it was decided to make temporary repairs and return to Australia.

Group Capt. Williams left Melbourne on Sept. 25, and had covered approximately 3,600 miles up to the time of the decision to return.

PARIS—CALCUTTA—PARIS.

On Nov. 11, M. Coste and Lieut. Rignot, who on Oct. 28-29 made a World's Record for Distance covered in a straight line, by flying from Le Bourget to Jask, Persia, on a Breguet XIX (500 h.p. Hispano-Suiza engine) and then continued their flight to Calcutta, arrived back at Le Bourget. In all they covered 20,000 kms. (12,420 miles) in 105 hours' flying time.

The machine they used was the same one which was used by Capt. Girier and Lieut. Dordilly, on their flight Paris—Omsk—Paris, and by M. Coste and Lieut. de Vitrolles on their flight Paris—Assouan—Paris.

M. Coste may be remembered as putting up a non-stalling show on a Farman Goliath at Croydon on the day when Mr. Fokker on his F.VII (Napier) and Mr. Bulman on a slot-winged Avro, gave their rival demonstrations. M. Coste left the Air Union to become chief pilot to the Breguet firm.

ITALY—BRAZIL.

The Brazilians, de Barros, Newton Braga, Vasco Cinquini and Arthur Cunha, who are attempting to fly from Genoa to São Paulo, Brazil, on a Savoia 55 (two 500 h.p. Isotta-Fraschini Asso engines), are at present in the Cape Verde Islands. They are detained there by a minor revolution among the crew as to who is to be pilot for the Atlantic crossing.

The latest information states that Senor Cunha, hitherto chief pilot, has succumbed to superior forces and has been evacuated. Senor de Barros, the commander of the expedition, will assume the post of pilot.

MARSEILLES—MADAGASCAR.

On Nov. 7, Lieut. de Vaisseau Bernard, who, in company with Lieut. de Vaisseau Guilbaud, left Marseilles, to fly to Madagascar and back, arrived at Stanleyville, Belgian Congo. Lieut. de Vaisseau Guilbaud is held up at Gaya, on the River Niger, with minor trouble, and is making repairs with spares carried in the machine.

Lieut. de Vaisseau Bernard, who is using a Lioré et Olivier flying-boat (400 h.p. Jupiter engine), has so far covered 9,300 kms. (5,775.3 miles), and has a further 4,000 kms. (2,484 miles) to go before reaching Majunga, Madagascar.

POSTE RESTANTE.

Two French mail aeroplanes belonging to the Compagnie Générale d'Entreprises Aéronautiques (Lignes Aériennes Latécoère) and operating on the Casablanca—Dakar route, were compelled to land at Cape Bojador, in the Spanish territory of Rio de Oro, by dense fog.

The machines were set on fire by Moors, the mail destroyed, and the pilots, MM. Gomp and Lassalle, were carried off into the interior to be held to ransom.

Efforts are being made to secure their prompt release.

AIR AFFAIRS IN PARLIAMENT.

R.A.F. RESERVE TRAINING.

In the House of Commons on Nov. 11, in reply to a question by Sir Harry Brittain, the UNDER-SECRETARY OF STATE FOR AIR said that the De Havilland Company's school trained both officers of the Air Force Reserve and also private pupils, including members of light aeroplane clubs. The Air Ministry was directly concerned with the question of the number of the former class of pupils only and had guaranteed to send a total of 375 Reserve officers to the school in the period of four years, from April 1, 1925.

THE CAIRO—KARACHI SERVICE.

In the House of Commons on Nov. 11, in reply to a question by Sir Harry Brittain, the UNDER-SECRETARY OF STATE FOR AIR, said that unless some unforeseen difficulty arose the fortnightly aeroplane service between Egypt and India would be in operation by the beginning of January, 1927.

CAPTIVE BALLOONS.

In the House of Commons on Nov. 11, in reply to a question by Mr. George Harvey, the UNDER-SECRETARY OF STATE FOR AIR said that an official investigation into the cause of the accident by which E. T. Willows and four passengers had lost their lives, had taken place. The existing regulations required all aircraft, including captive balloons, to be certified as airworthy, and, in addition, special permission in writing was necessary before captive balloons were flown. The question of the procedure in connection with the certification of balloons was at present under review.

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THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Nov. 14.
Flying was only possible on three days. Total time was 12 hrs.
The following members were given instruction:—C. E. Murrell, Lady Bailey, G. H. B. Madocks, H. Spooner, H. Solomon, J. G. Crammond, A. Southgate, F. C. Elford, Miss Taggart, G. Wallcousins, The following flew solo:—N. Jones, G. H. Craig, S. O. Bradshaw, Lady Bailey, O. J. Tapper.
The following were given joy-rides:—L. C. Davey, S. H. J. Garne, Mrs. Glaskie, Miss Wilson, J. J. Hofer.

The Lancashire Aero Club.

Report for week ending Nov. 13.
The weather permitted flying on Sunday and Friday. Total time for the week 18 hrs. 35 mins., made up as follows:—
Dual with Messrs. Brown, Cantrill and Scholes: Twemlow 1 hr. 20 mins., Crosthwaite 45 mins., Cohen, Costa, Dickinson, McNair and Miss Brown 35 mins. each, Anderson 40 mins., Abdalla 30 mins., Newton and Wade 25 mins. each, Moore, Dobson and Powell 20 mins. each, Goodyear, Gattrell, Hargreaves, Leigh and Miss Emery 15 mins.
Solo: Messrs. Costa 2 hrs 25 mins., Goodfellow and Williams 40 mins. each, Leeming 35 mins., Lacayo 10 mins.
Joy-rides with Mr. Leeming: Miss Shiers 40 mins., Messrs. Mitchell 35 mins., Jones 30 mins., Powell 10 mins. With Mr. Lacayo: Mr. Bendon 1 hr. 35 mins. With Mr. Brown: Miss Barbour 10 mins.
Test flights 1 hr. 10 mins.

The large wood on the aerodrome is to be cut down and the Club is divided into factions over it. One party (which includes all the pupils who are tired of being told that they can't have instruction on landings because the wind is blowing south-west across the road) cannot praise too highly the broad-minded and public-spirited policy of the Avro Company. The other party (which includes all those who have been in the habit of strolling through the aforesaid wood with a gun on the look-out for the odd bird) strongly condemns the proposal as a piece of sheer vandalism and considers that a public protest should be raised against the desecration of one of the beauty spots of East Cheshire.

There is no division of opinion, however, upon Avro's proposal to put a light steam-roller over certain parts of the aerodrome, where the surface is particularly bad. A few days' rolling with the ground in its present soft state should do a tremendous amount of good.

We appreciate the sporting spirit shown by the Yorkshire Club in last week's notes and thank them for it. It does seem a pity that G-EBNN should be doing nothing, but if they would care to loan the rest of her to one of our members we have a pilot available at the moment who is most anxious to do cross-country flying and who would gladly (provided he was allowed to land as often as he liked) follow Messrs. Stack and Iccete, round the World if need be, with a view, of course, to bringing back any of the missing parts found in their possession!

The Newcastle-upon-Tyne Aero Club.

Report for week ending Nov. 14.
Total flying time, all by members, 3 hrs. 15 mins.
Very bad weather persisted during the week, and, in addition, L.X. has been taken off service for some minor repairs and L.Y. will only go back to service at the beginning of next week.
The following members flew with passengers: Dr. Dixon with Mr. Wilson, Mr. Forsyth Heppell with Mr. Wilson and Mr. J. M. Kennedy. Mr. Irving put in some more solo flying, and is now ready for his ticket tests. He flew for 75 mins. during the week.

The Yorkshire Aeroplane Club.

Report for week ending Nov. 12.
Total flying time 9 hrs. 45 mins., as follows:—Solo, 4 hrs. 15 mins.; dual instruction, 5 hrs. 30 mins.
The soloists were Messrs. L. S. Dawson, Lax, Mann, Norway, Watson and Wood.
The following received dual instruction:—Messrs. Gratwick, Mann, Oglesby, Swift, Wilson and Capt. Beaumont.
The number of flights totalled 25.
Flying has only been possible on four days this week on account of the weather. We have given up the unequal struggle to frame this remark differently.

The total time flown for the first three days when flying took place this week was, curiously enough, precisely the same as last week; but Friday's figure of 1 hr. 50 mins. brought the total up to that.

Mr. Mann was launched on Saturday and put up a very good show. On Sunday no less than eight members stood up before Mr. Stevenson and successfully recited their piece to qualify for an "A" licence. Mr. Loton has been appointed examiner for the flying test, and six members are now waiting for his attentions.

Miss Woodhead, after eight and a-half hours' dual, is now waiting for weather to go solo. We claim this as a Club record for an "ab initio" lady. Possibly the Newcastle Club hold the "slow but sure" record for a member of the fair sex, as we understand one took some sixty hours to reach the first solo stage. Will anyone dispute these claims?

The Midland Aero Club.

Report for week ending Nov. 13.
Total flying time 5 hrs. 2 mins.
The following members had dual instruction:—A. B. Gibbons, C. Fellowes, G. Aldridge, and H. Smith.
The following made solo flights:—A. B. Gibbons, R. L. Jackson, H. J. Willis, E. J. Brighton, C. L. Knox, W. Swann, and J. Brinton.

On Sunday Mr. Gibbons made his first solo flight very satisfactorily. A week of very high winds restricted the hours flown.

The Hampshire Aeroplane Club.

Report for week ending Nov. 11.
Total flying time 4 hrs. 38 mins.
Instruction flying 3 hrs. 45 mins. Solo flying 53 mins.
The following members had instruction:—Messrs. Graham 2 hrs 20 mins., Stokes 35 mins., Nicholson 10 mins., Bound 10 mins. Courtney 15 mins., Shepherd 25 mins.
The following flew solo:—Mr. Perfect 28 mins., Flg. Off. Clarkson 10 mins., Lt. Graham 15 mins.

Capt. Bailey, of Imperial Airways, has kindly consented to act as examiner for the technical examination of applicants for Royal Aero Club Licences and has been approved for that office.

The Club has arranged to hold the first Annual Dinner at the South Western Hotel, Southampton, on Thursday, Dec. 2, when the President, Lord Louis Mountbatten, will preside.

AIR NAVIGATORS' LICENCES.

Air Ministry Notice to Airmen No. 73, of 1926, states:—
An examination for 1st and 2nd Class Air Navigators' licences will be held at the Air Ministry, Gwydyr House, Whitehall, on Monday and Tuesday, Dec. 6 and 7. Application forms, the syllabi, and conditions of examination, may be obtained on application to the Secretary, Air Ministry (C.A.2), Gwydyr House, Whitehall, London, S.W.1.

Formal applications to sit at this examination should be received at the above address not later than Nov. 29, 1926. Candidates should give with their applications full details of any qualifications and experience they already possess.

Before a licence can be issued, candidates will have to pass a medical examination at the Central Medical Board, 5/6, Clements Inn, London, W.C.2. Arrangements can be made for this examination to take place on Dec. 8, 1926, if candidates make early application.

A PRACTICAL TEST.

The ultimate and only test of mechanism is the test of practical use. Aero-engines in particular are to be judged by their performance in actual flying. On the Continental services of Imperial Airways, Ltd., twenty Napier Lion engines are in use, and during the twelve months ending Sept. 30, 1926, these twenty engines between them covered 566,200 miles—an average of 28,310 miles per engine. One engine actually covered 44,495 miles.

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WITH BANJULELE TO BAGHDAD.—Mr. Bernard Leete (left) and Mr. Neville Stack, who left Stag Lane on two D.H. Moths on Nov. 15, complete with banjulele, to fly towards India.

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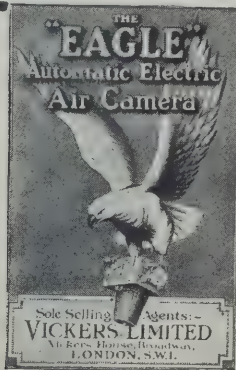
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 Telegrams: VICKERS, SOWEST, LONDON.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS. The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 12; Tuesday, 15; Wednesday, 15; Thursday, 12; Friday, 12; Saturday, 4; Sunday, 4.

IMPERIAL AIRWAYS LTD:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 32, passengers 106, freight 11 tons.

ATR UNION:

Paris—London: Machines 12, passengers 15, freight 12½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 12, passengers 9, freight 3 tons.

SABENA:

Machines 6, passengers 9.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 12, passengers 21.

PRIVATE:

Machines 6, passengers 5.

Total number of trips by British Machines, 38, carrying 111 passengers. Foreign Machines, 26, carrying 45 passengers.

Comparative Figures:

Week ending Nov. 4:

Machines, 74; Passengers, 156; Crews, 86; Total personnel, 242.

Corresponding week, 1925:

Machines, 62; Passengers, 157; Crews, 75; Total personnel, 232.

Corresponding week, 1924:

Machines, 40; Passengers, 153; Crews, 52; Total personnel, 205.

Corresponding week, 1923:

Machines, 80; Passengers, 157; Crews 129; Total personnel, 286.

Corresponding week, 1922:

Machines, 22; Passengers, 55; Crews, 48; Total personnel, 103.

Corresponding week, 1921:

Machines, 63; Passengers, 121; Crews, 92; Total personnel, 213.

Corresponding week, 1920:

Machines, 51; Passengers, 86; Crews, 64; Total personnel, 150.

Croydon Notes.

The passenger traffic is showing the usual amount of diminution which is prevalent in the winter month. The goods traffic, however, continues to grow. Though people object to being ill and cold in giant air liners themselves they have no objection to their goods being as ill and cold as they like, provided that they reach their destination—or that they get insurance money from the good and kind Capt. Lamplugh instead.

When one was last at Croydon the Hercules was "incessantly expected," but had not yet arrived. It is to go on the Cross-Channel services for a few weeks by way of a test under service conditions.

The Hampstead with the Bristol Jupiter engines is proving extremely efficient. The engines are tuned to run at low speed, with the result that petrol consumption is very low and the performance remains about the same.

The Vickers Vulcan (Napier) is again flying on the service with passengers and freight. It is now fitted with a metal Leitner-Watts airscrew which seems to be highly satisfactory.

The silly season is upon us again. The first item of news appeared in *The Daily Mail* on Monday, when the following appeared:—

"Dancing the new smooth Charleston has been accomplished in an air liner at a height of 2,000 feet. This is the first time that dancing has been attempted in the air."

The experiment was carried out at Croydon aerodrome in one of the London—Paris Argosy machines, belonging to Imperial Airways, and throughout the dancing the machine kept perfect poise.

Mr. Richard Granville, a leading exponent of the dance, and Babette, his partner, first gave an exhibition. A space was cleared in the cabin, which as a rule accommodates 20 passengers, and the music was supplied by a gramophone. Afterwards Mr. Granville gave a lesson to a passenger.

As a matter of fact a dancing stunt was first performed in a Goliath in 1920. And how easy it must be to hear the music provided by a gramophone in the cabin of the Argosy with the engines running. Anyhow, one feels glad that it was the flat Charleston. An ordinary every-night affair would have kicked the Argosy to pieces. One presumes that the Flat Charleston has been invented to be performed in the limited space of modern flats. Or is it done by "Flats" chiefly?

Presumably we shall soon be in the thick of sons rushing by air to dying mothers, old ladies being carried out to special air ambulances because that is the only way they can travel, air liners with central engine rooms and all the other hardy annuals. Well! Anyhow, Christmas is getting nearer.—G. D.

THE IMPERIAL AIRWAYS MIDDLE-EAST AGREEMENT.

The text of the agreement between the President of the Air Council and Imperial Airways Ltd. for the establishment of the Cairo—Karachi Air Route was published on Nov. 15, as Command Paper 2758. The agreement provides for a subsidised fortnightly service to be established not later than Jan. 1, 1927.

Under the agreement the Air Ministry contracts to provide certain specified ground facilities in the way of aerodromes and wireless apparatus.

The maximum annual subsidy that can be earned is £93,000.

The Times of Nov. 16 states:—

Should this be earned in full in each of the five years, and should the cost of the ground organisation falling on the Air Ministry reach the estimate of about £65,000 over the whole period, the total cost of the scheme would be brought slightly above the figure of £500,000 mentioned in the Supplementary Estimate of July, 1925.

The Command Paper points out that the institution of this service will make it possible to terminate the fortnightly mail service between Egypt and Iraq, hitherto performed by the Royal Air Force. Subject to overriding military necessities it has been arranged to withdraw from Iraq

The SUPERMARINE "SOUTHAMPTON" TWIN-ENGINE FLYING BOAT (Two Napier-Lion Engines.)



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ENGLAND.

Dear Sirs, Flight of "Southampton" Flying Boats to Egypt and back.

Messrs. Cellon (Richmond) Ltd., 23rd Sept. 1926.
Petersham Road, Richmond, Surrey.

Since the return of the two "Southampton" type machines which recently carried out a very successful flight to Egypt and back, we have had an opportunity of examining the condition of these machines after their strenuous service in very varying atmospheric conditions.

We feel sure you will be both interested and pleased to know that the condition of the fabric on both machines is in first-class order, its original soundness being still retained, which is a proof of the excellence of your dope as these machines were never placed under cover from the time they left England until they returned, and at all stopping places were moored out in the open under constantly varying conditions.

We enclose herewith a copy of the official report of this flight, and the results are a still further testimony to the excellence of the dope with which you supply us and which we use on all our machines.

Yours faithfully,
James Bird
Managing Director.

For and on behalf of
THE SUPERMARINE AVIATION WORKS LTD.

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The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
5. The petrol is carried in a 12-gallon streamline tank above the top wing, which gives a cruising flight of three hours. The oil is carried in a streamline tank on the port side of the fuselage.

FASTEST MACHINE in the GROSVENOR CUP RACE, 1926. Average Speed, 105.5 M.P.H.

WESTLAND AIRCRAFT WORKS,
(Branch of Petters Limited)
YEOVIL.

Specification.

Leading Weights and Dimensions:

| | | |
|-------------------------------------|-----|----------------------|
| Weight, fully loaded | ... | 1,150 lbs. |
| Weight, light, without fuel and oil | ... | 640 lbs. |
| Fuel capacity | ... | 12 gallons. |
| Useful load apart from fuel and oil | ... | 380 lbs. |
| Surface | ... | 145 sq. ft. |
| Span | ... | 30 ft. 8 ins. |
| Width, folded | ... | 9 ft. 9 in. |
| Length | ... | 20 ft. 5 in. |
| Petrol consumption | ... | 20 Miles per gallon. |

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

a Squadron of the R.A.F. with a substantial net saving to the State.

The Command paper lays down that the Postmaster-General will arrange with the Company as to the mail rates.

In the first year of operation the payments for each completed flight up to and including 52, at fortnightly intervals, shall be £1,200 per flight on the Egypt to Basrah section and £900 for each flight of the first 26 flights on the Basrah to Karachi section.

THE D.D.C.A.

Mr. F. L. G. Bertram, C.B.E., until recently an Assistant Secretary in the Department of the Secretary of the Air Ministry, officially known as "Principal (old style)," has been appointed to the new post of Deputy Director of Civil Aviation.

Mr. Bertram, who, unlike almost everybody else in the Department of Civil Aviation, is a permanent Civil Servant of many years' experience, has held his present grade in the Air Ministry since October, 1919.

The post of Deputy Director of Air Transport, hitherto held by Lieut. Colonel Ivo Edwards, C.M.G., has been abolished, and Colonel Edwards is now officially Chief Technical Adviser to the Director of Civil Aviation.

One gathers that Mr. Bertram's department will deal with all administrative matters in the Department of Civil Aviation, while Colonel Edwards' deals with operations, the difference between the two departments being very much like that between the Adjutant-General's Department and the General Staff at the War Office.

Although a permanent Civil Servant, Mr. Bertram has for many years been keenly interested in the practical side of Civil Aviation, and is seldom absent from any of the official functions at which personages of importance are bidden to aerodromes to see practical expositions of aviation. Both he and the Department of Civil Aviation are to be congratulated on the new arrangement.

GERMAN COMMERCIAL AVIATION.

The Deutsche Luft Hansa A.G. have just published the figures for the operations of their lines from the date of opening, Apr. 1, 1926, to Aug. 31, 1926. It is interesting to compare these with the figures of the two companies, Junkers and Aero Lloyd, which were merged into the Luft Hansa for the entire previous year.

Between Apr. 1 and Aug. 31, Luft Hansa covered a total distance of 2,500,000 miles, as against 3,000,000 for the year 1925. Other figures were:—37,968 passengers, 249 (metric) tons of baggage, 120 tons of freight and 125 tons of mail.

The system of compilation of these figures by the old companies counted each passenger and each pound of freight over and over again if carried several distinct stages in succession so that they cannot be compared with the figures of the Luft Hansa. If, however, the figures given above for the five months of 1926 are readjusted to the old system they compare as follows:—Passengers carried, 56,331 compared with 55,185 for the whole of 1925; baggage carried, 409 tons compared with 521 tons last year; mail and freight carried, 434 tons compared with 287 tons last year.

PERSONAL NOTICES.

DEATHS.

HAYWARD.—On Nov. 9, at South Farnborough, as the result of a flying accident, AC.2. Cecil Herbert Hayward, R.A.F.

HINTON.—On Nov. 11, at Eastchurch, Kent, as the result of a flying accident, AC.2. Percy Charles Hinton, R.A.F.

LANGRIDGE.—On Nov. 12, Sq. Ldr. Arthur Bracy Langridge, R.A.F., of St. Andrew's Vicarage, Uxbridge, second son of the late Henry Langridge, of 54, Victoria Street, London, and Chillies, Buxted, Sussex.

MOSSMAN.—On Nov. 9, at South Farnborough, as the result of a flying accident, Cyril Vernon Mossman, Plt. Off., No. 4 (Army Co-operation) Squadron, R.A.F.

Mr. Mossman joined the R.A.F. with a short service commission in September, 1925, and was posted to No. 5 Flying Training School, Sealand, for a course of instruction. He was appointed to No. 4 (Army Co-operation Squadron) last August.

TAYLOR.—On Nov. 11, at Eastchurch, Kent, as the result of a flying accident, Sjt. Pilot George Frederick Taylor, R.A.F.

WOOD.—On Nov. 12, at Castor, Northampton, as the result of a flying accident, David Gam Harcourt Wood, Flight Cadet, R.A.F., youngest son of the late Major Harcourt Wood and of Mrs. Harcourt Wood, Ringstead, Hunstanton.

BIRTHS.

CROKE.—On Nov. 10, at 6, Nelson Road, Southsea, to Phyllis, wife of Plt. Lt. L. G. Le Blount Croke, R.A.F.—a daughter.

GRAHAM.—On Nov. 9, at Rose Cottage, Bognor, Evelyn, the wife of Capt. W. L. Graham (late R.A.F.)—a son.

MULCAHY-MORGAN.—On Oct. 24, at Cairo, to Barbara (née Heape), wife of Wing Cdr. T. W. Mulcahy-Morgan, R.A.F.—a daughter.

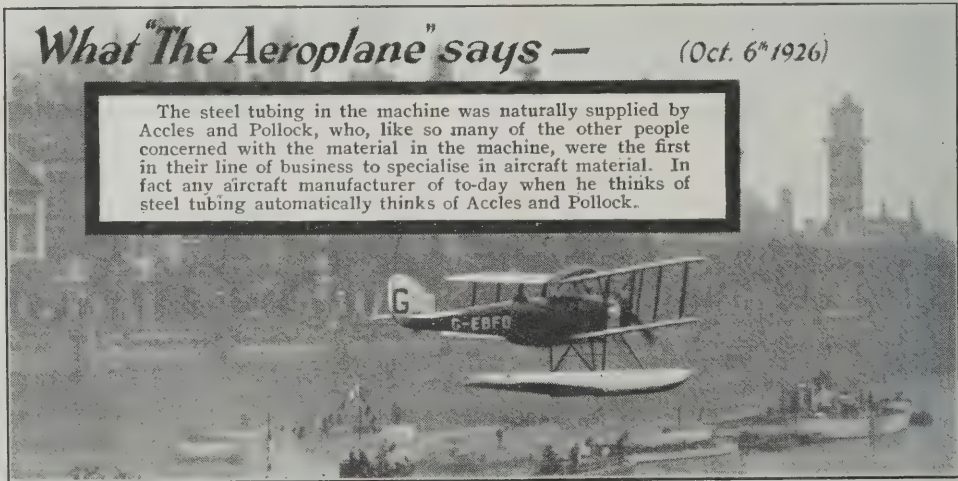
WINCH.—On Nov. 3, at 16, Barn Hill, Wembley Park, to the wife of Herbert Winch, late R.A.F.—a son.

PROOF OF TUBULAR EXCELLENCE

What "The Aeroplane" says —

(Oct. 6th 1926)

The steel tubing in the machine was naturally supplied by Accles and Pollock, who, like so many of the other people concerned with the material in the machine, were the first in their line of business to specialise in aircraft material. In fact any aircraft manufacturer of to-day when he thinks of steel tubing automatically thinks of Accles and Pollock.



In the De Havilland Machine used by
SIR ALAN COBHAM

in his recent and famous London-Melbourne-London flight, all the tubing and tubular parts were of our manufacture.

What better demonstration of their suitability for important aircraft construction?



A. & P.
Cold-Drawn
Weldless Steel Tubes

meet every requirement in Aircraft Construction and as such are used by practically all the leading Aircraft Manufacturers.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. C. Grey

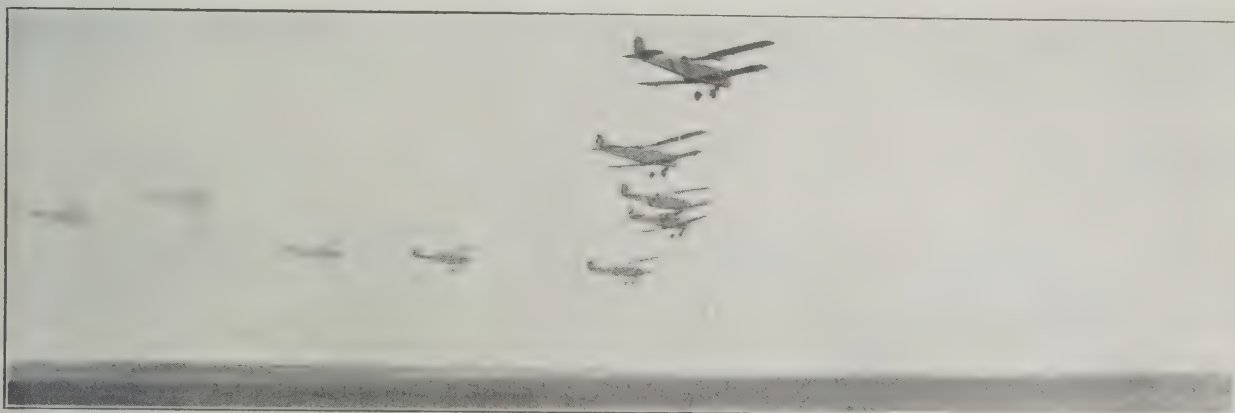
Vol. XXXI. No. 21.

SIXPENCE WEEKLY.

[Registered at the G.P.O. as a Newspaper.]

"NIL NOS TREMEFACIT."

(Motto of No. 55 (Bombing) Squadron, R.A.F.)



THE KING'S BIRTHDAY :—No. 55 (Bombing) Squadron, R.A.F., in "Vic" formation flying past the saluting base at Hinaidi, Iraq, on the occasion of His Majesty's birthday, June 3, 1926. No. 55 Squadron, R.F.C., was formed in June, 1916, disbanded on Jan. 22, 1920, and reformed on Feb. 1, 1920, from No. 142 Squadron.

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K.L.G.'s are standard on all the world's most reliable aircraft. Not only are they the most efficient plug, as proved by their performance, but they are RELIABLE. K.L.G.'s are for aircraft the best Safety First device ever produced.

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DEC 10 1926

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FOR THE PRIVATE OWNER

THE AVRO "AVIAN" two-seater light aeroplane was the only newly designed machine at Lympne, and it has been universally acknowledged that it was the most interesting aeroplane present. "The Aeroplane" said:

"THE 'AVIAN' is really remarkable. Only a few years ago our most noted scientists proved to their own satisfaction that it was quite impossible for any aeroplane to carry its own weight as useful load. Yet here we have a machine which instead of going 50-50, performs with roughly 45 per cent. construction weight and 55 per cent. useful load, and it is the fastest machine in the Competition."

THIS extraordinary weight-carrying capacity of the competition machine not only serves to indicate once more the superiority of Avro design, but makes it possible to secure by modification all the essential qualities of the privately owned aeroplane, and, moreover, those refinements which help so much towards the comfort of aerial travel, without fear of overloading.

THE AVRO "AVIAN" will shortly be available fitted with the "Cirrus" Mark II engine. Advance particulars will gladly be sent on request.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

NOV. 24,
1926.

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Aeronautical Engineering

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Abroad, 3 months, 8s. 9d.; 6 months, 17s. 6d.; 12 months, 35s. Canada, 1 Year, 8s.
U.S.A., 1 Year, \$8 50c.

ON WHERE THE JOKE COMES IN.

An American citizen who has an intimate knowledge of the aeronautical politics of the United States, regrets that certain passages in the leading article in *THE AEROPLANE* of Oct. 20, concerning "Learning from the Experience of Others" did not express properly the position of American wartime production of aircraft. He has therefore had the kindness to send an amended version of the paragraphs to which he objects.

This amended version is published hereafter. The words printed in italics are those which he suggests ought to have been in the original paragraph:—

During the War American aircraft were a joke, except when they were a tragedy. *The joke was on the Americans, although too few people acknowledge the fact.* America spent millions of pounds manufacturing aircraft during the War and produced over 14,000 Planes and over 40,000 Motors in the eighteen months following her delayed entry into the hostilities. Only a few hundred of these planes reached the front owing to delays in shipping, although thousands were congesting warehouses and docks when the Armistice was signed.

When America joined us in the War, we and the French and the Italians sent to America all our very best aircraft designs, together with quite a number of competent people to show the Americans how to build the machines. After considerable delay attending the attempts of the English, French and Italian Missions to convince the Americans of the superiority of their several designs, the English won. The only service planes ordered from the American Industry were from English designs. Hence the joke or tragedy on the Americans.

Personally one would not have ventured to say the things which he says. And one does not entirely agree with some of his views.

One has never believed that America's entry into the War was belated. America had no quarrel with Germany and no one has ever yet been able to discover why America ever did go to war with Germany. The sinking of the *Lusitania* is generally supposed to have been the determining cause. But, although the sinking of the *Lusitania* was bad policy, purely for psychological reasons, it was a perfectly justifiable act of war, and nobody has the slightest right to bear Germany any grudge about it.

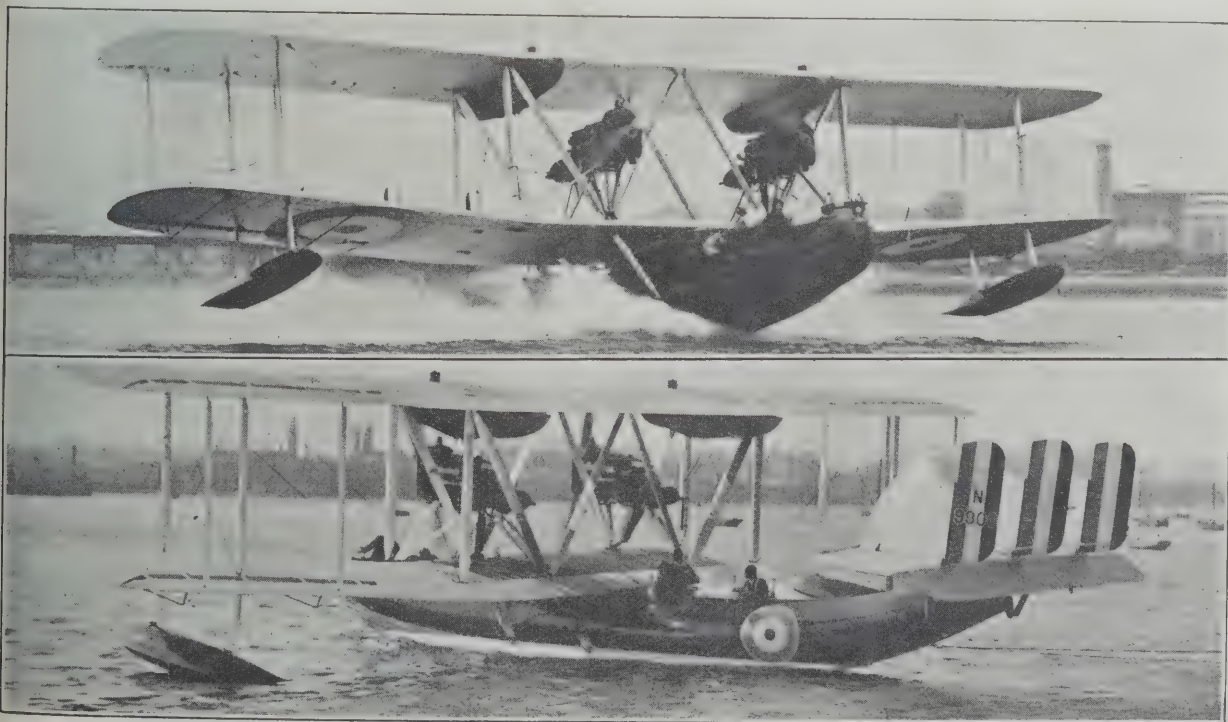
Apart from that one can discover no reason for the States ever coming into the War at all. Therefore one can only imagine that America came to the assistance of England because all the people who have any real influence in the States, or "cut any ice," as the Americans themselves say, are either English, Irish or Scots, and that blood was thicker than water.

America's entry into the War may have been influenced to some extent by the big international financiers, who saw that the War might go on for ever unless one side or the other obtained some fresh blood and money. But even the big financiers, with all their hold over the Press of the World, could never have moved the Nordic nation on the other side of the Atlantic unless the psychological momentum of the people had moved in the right direction. Therefore one has always been rather surprised that such a vast mass as the population of the United States got a move on itself as quickly as it did.

One would certainly never have dared to emphasise, as this kindly correspondent has done, the fact that American engineers chose English designs against the French and Italian designs. But now that he has mentioned it one may at any rate say that the American authorities showed their good judgment. The pity was that in modifying those designs to take the American Liberty engine, itself one of the World's great engineering achievements, the American aeronautical engineers did not know enough about aeroplanes to do the job properly.

However, to-day the Americans have distinctly got the better of us in many ways. The standard pursuit ships which actually exist in the Army Air Corps have a considerably higher performance than anything which is at present in the possession of the R.A.F.

We certainly have single samples of high-speed fighters in this country which are fully up to the American standard of performance, they are the result of private enterprise and they are not likely to be issued to the R.A.F. for a very



A RECORD BREAKER.—The Supermarine Southampton (two Napier Lions), the only twin-engined aeroplane which maintains its height with one of its engines stopped,

long time to come. By which time, of course, the Americans will be just that one long jump further ahead.

Therefore, though the joke may have been on the Americans when they got our designs and yet failed to put any of them over the fighting line in France, the joke is very much on us to-day, seeing that in the intervening eight years the Americans have improved our designs to a point which we have not yet reached ourselves.

A STILL WORSE JOKE.

Nevertheless, even that joke is not so hard on us as is the fact that after our high and mighty technical authorities had proclaimed that we could not possibly produce a seaplane in this country in twelve months to beat the American Schneider Trophy winner of 1925, the Italian Macchi Company should go and produce in seven months a seaplane which is some fourteen miles an hour faster than last year's American winner. Some idea of the severity of the joke may be acquired by restating the facts published last week.

The American winning machine made an average of 232 m.p.h. Mr. Broad on the Gloster did 199 m.p.h., and the Italian representative on a Macchi flying boat did 168 m.p.h. Our experts said that it was impossible to increase our speed by forty m.p.h. from 199 m.p.h., so as to beat 232 m.p.h., although we had a full year in which to do it.

The Italians merely went and put their speed up from 168 m.p.h. to 246 m.p.h., a matter of almost 80 m.p.h. And this extraordinary feat was accomplished in seven months. The Italians could not have started building those Macchi monoplanes until after the meeting of the *Fédération Aéronautique Internationale* in January of this year, and they had them actually flying on test in September.

ANOTHER VIEW OF AFFAIRS.

Just by way of a salve to the tender susceptibilities of British aircraft designers and constructors after these terrible blows it seems well to publish some extracts from a letter received from an Englishman who once had a good deal to

do with aviation in this country and is now domiciled in the United States.

He asserts that the average American designer is inherently no more intelligent than is the average British designer, and that the former is as much tied up in the red tape of Service procedure as is the latter. Furthermore he is of opinion that the Air Bureaux of the American Services are no more intelligent than are the Air Ministry's technical officials. Therefore he writes as follows:—

I think that the credit for our superiority in Pursuit airplane design and, in fact, the credit for that excellent Specification which you published should go almost entirely to the U.S. Aircraft Industry, and, notably, Curtiss. What I want to bring out is the fact that it is the Aircraft Industry which has taught the Governmental Experts what to ask for and what to demand.

I have heard of occasions when the specification for a particular type of aircraft has been issued and one of the most prominent firms in the Industry has gone to the Service people and proved to them that certain of the requirements demanded were utterly illogical and impossible.

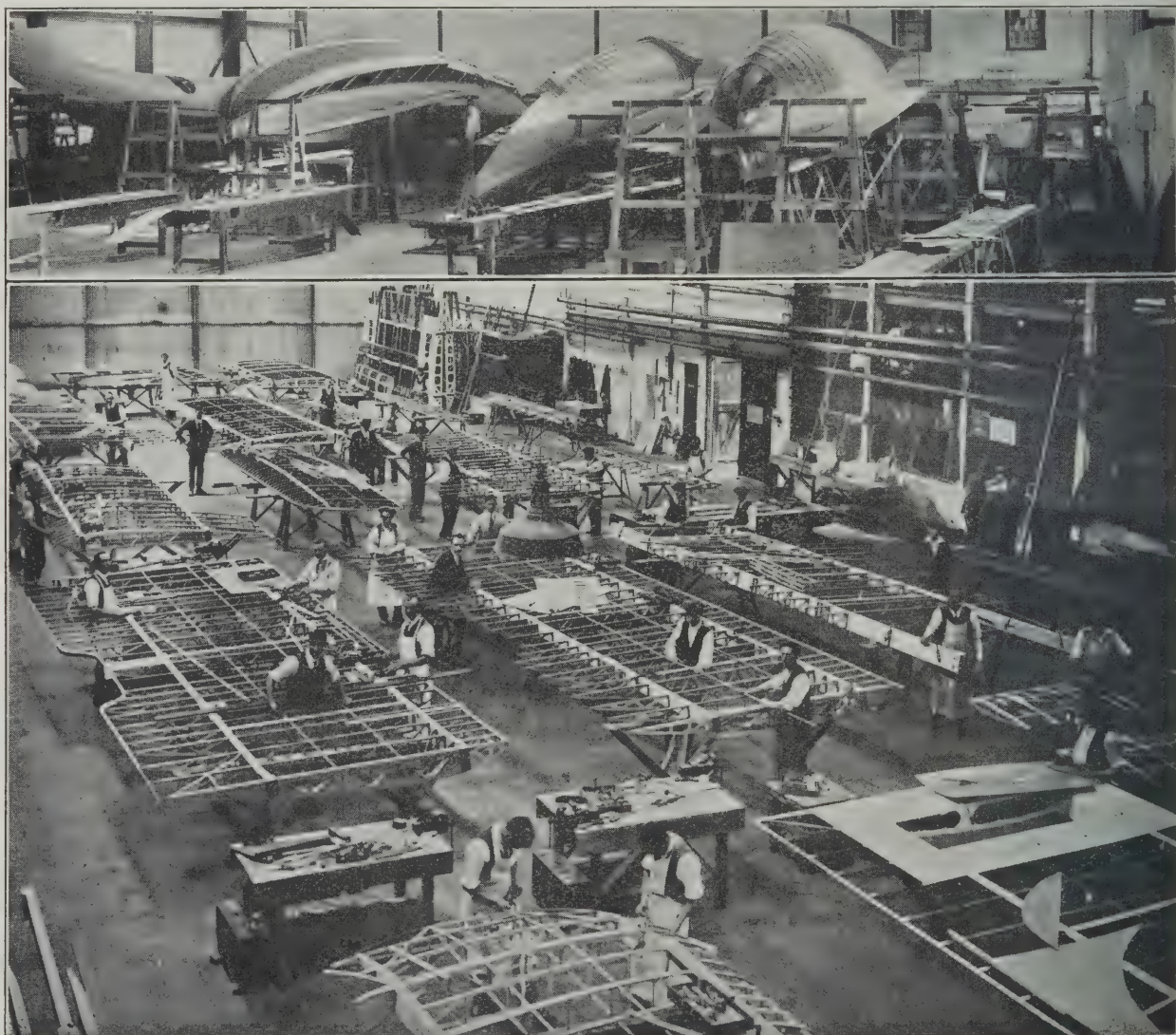
The Army Air Corps now is on pretty good terms with the Aircraft Industry and understands its problems. The Aeronautical Chamber of Commerce has long advocated the letting of contracts under competitive conditions.

For example, shortly after Curtiss produced the PW-8, Boeing came out with a better pursuit plane. The Air Corps, through a judicious allocation of contracts, kept these two concerns in a perpetual race for supremacy in the pursuit field.

The method is something like this:—While Curtiss builds the best pursuit ship the Air Corps gives a 75 per cent. order to that company and a 25 per cent. order to Boeing, assuring them that when their plane is superior to the Curtiss machine the 75 per cent. order will be for Boeing ships, and so on.

These figures are, of course, only illustrative. The result of this policy is that Curtiss and Boeing design staffs are kept on edge, so that a product ever improving in excellence is developed,—a result common to all competitive methods.

Now, here is the opposite method. The U.S. Navy has recently issued specifications and proposals for Navy fighters designed around the Pratt and Whitney Wasp air-cooled engine (425 h.p. radial). The proposal was issued early in October and the planes for the competition were to be constructed and ready by Jan. 1, which, of course, is an



WHERE GOOD SEAPLANES ARE MADE.—The Supermarine Works at Woolston, Southampton, showing Southampton hulls and wings being built.

No other aero engine can show such a record of achievement during 1926 as the NAPIER LION—

For the three long-distance Service flights carried out by the Royal Air Force—from Cairo to Cape Town and back to England; from Plymouth to Alexandria and back; from Cairo to Aden and back—Napier engines were selected. A total engine mileage of 101,000 was flown without any mechanical trouble.

The only crossing of the South Atlantic by a single machine was made by Commandante Franco when he flew from Spain to Buenos Aires, covering 6,259 miles in 59½ hours.

On commercial service Imperial Airways have flown Napier engines 566,200 miles in 12 months.

The First Prize in a competition held in Germany to discover the best German commercial seaplane was won by the only Napier engined machine entered.

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in the long run. Improve the
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utter impossibility, as the type is to be of entirely new design. A protest to the Navy that the best product would not be forthcoming if this date were adhered to has resulted in an extension to somewhere in May.

But the idiocy of the Navy people is well shown in the method of dealing with the companies entering. Of the preliminary designs submitted, three competitors for the actual competition are chosen. When the competition takes place next year, the winner will receive a contract, and that will be that. The second best plane will be purchased at *one-half the cost of development*, so that unless a company wins, it stands to lose at least 30,000 dollars, I should say. The third fellow is ignored entirely.

As the result of this method of procurement the Navy will probably be buying the same Wasp-engined fighters three years from now as it will purchase next year. Next year it will be a first-class machine—three years from now it will be hopelessly obsolete.

Yet the Army, without spending any more money, is getting a better pursuit plane every six months. There is the contrast.

The matter is very strikingly brought out in the case of the Curtiss CS type Navy three-purpose plane. Three years ago this was a reasonably good machine, but no one but Curtiss produced the type. The result was that this company very soon lost all interest in trying to improve it and eventually was perfectly willing to let someone else build them—the Curtiss Company being interested in something more exciting at that time.

Consequently Glenn L. Martin now builds 1923 CS planes by the yard and is no more interested in their performances than I am.

Precisely the same thing has happened, it seems to me, in the case of the Martin Bomber. In its day, this was a fine bombing airplane. All the Glenn L. Martin interest in it was quickly stifled, without any competitive element to fan it up, and the various imitations of the original Martin Bomber which have been produced from time to time are in every case inferior to the parent design, itself now years out of date.

From this it may be judged that at any rate so far as the U.S. Navy is concerned American constructors are really no better off than are ours. Which only shows that the naval mind works in very much the same grooves all the World over. But it will be seen that the U.S. Army method does definitely tend to improve the breed of American aircraft.

CORROBORATIVE EVIDENCE.

Just by way of showing that the correspondent whose letter is quoted hereinbefore knows his subject, here is another quotation from an entirely different source, which says much the same thing in different words:—

A new method of procurement, adopted under the law of last Summer, seems to be working out very well. Through it we are gradually accustoming the Services to a policy of developing and keeping in production two types of airplanes for each class of work, always giving the better airplane a little the bigger order, and reserving the right to replace the worse plane with one of new type built by anybody and proved in Government tests to be superior.

The Navy are slow to make any change in habits, and we have not gotten as far along with them as with the Air Corps. I should say that, for the first time in five years, the industry is beginning to settle down to work and seriously accomplish results.

There is not enough engineering work being done. Curtiss stands alone as the only organisation building from its own operative wind-tunnel research, and this of course is not healthy, but I believe that pioneering will become increasingly popular among the other companies.

By way of showing still further that the U.S. Aircraft Industry is not really so much better placed than we are in this country one may mention that not long ago another correspondent in the States sent one some interesting figures relating to the prices paid by the U.S. Government for all-metal machines, both experimental machines and duplicates of such machines in small quantities. That is to say, the order for duplicates was not a production order, but was for just about enough machines to make each one cost rather less than a single experimental machine.

One showed these figures to a number of friends in the British Aircraft Industry. And they practically all agreed that British aircraft firms would be very pleased to build all-metal machines for rather less money than the American price.

THAT IS THE QUESTION.

That being so, why is it that after having led the World in aircraft design before the War, and having again produced the World's best aeroplanes towards the end of the War, after having suffered so bitterly through the machinations of the Royal Aircraft Factory in 1915-16, we should now find ourselves with the Americans beating us in single-seat and two-seat fighters and the Italians beating us in high-speed seaplanes? Those are just the very types in which we have excelled in the past.

It is perfectly true that to-day the standard of construction of British aircraft is the highest in the World. But if we are to get the World's markets, and also are to equip the R.A.F. with machines that will make R.A.F. personnel safe against anything that is put up against them, we must have higher performance all round.

Nearly a year ago we heard a great deal about these secret seaplanes which the Air Ministry were to order so that even if we could not win the Schneider Trophy we could still get the seaplane speed records at or about the same date. Nevertheless, as a short article in THE AEROPLANE disclosed

a week or two ago, not one of those machines is yet ready and all of them are still waiting for engines.

Evidently what we need is somebody with the driving power of a Mussolini on the technical side of the Air Ministry, first of all to break down all the barriers of delay in the technical departments, and secondly to stir up our designers to produce new ideas. The ideas are certainly there, if only they could be produced.

If the various senior designers of the firms do not happen to have the ideas themselves, they must exist among the younger generation, for there are always better fish in the sea than ever came out of it, and indisputably the younger men in our design departments to-day know a very great deal more about such science as there is connected with aeronautics than did the senior men when they were the same age. What somebody in authority has to do is to get those new ideas out of the design departments and then have them developed as quickly as possible.

A PARABLE.

On Friday of last week the Officers of the Marine Aircraft Experimental Station at Felixstowe gave a party to which they invited a representative of each and every aircraft and engine constructor in Great Britain. Most of the pioneers of British Aviation were there, though some of the younger firms were content to send representatives instead of the heads of the firms coming themselves. After dinner there was the usual cheery, good-natured rag, in which everybody took part, somewhat to the detriment of furniture, clothing and person.

On the whole the aircraft constructors acquitted themselves like men, although most of them were not quite so young nor so fit as their hosts in the Service. At one moment, in fact, the constructors actually evicted the Service from its own ante-room. But superior training told in the end against weight of mind and body, certain constructors basely deserted the battle front, and the survivors were thoroughly well beaten-up by the Service.

The next day at lunch, which was also breakfast, the representative of a famous firm, nursing sundry bruises, remarked plaintively, "I wonder why the Mess beat us up so badly last night?" Then he added, "I think I've got it. We keep about twenty hens at home, and for months the whole lot between them produced about one egg a day. A couple of months ago we got an Alsatian pup, and he has been chasing the hens round like fury ever since, and now they are laying an average of an egg per hen per day."

The parable seems to need no interpretation.—C. G. G.

THE FEDERATION AERONAUTIQUE INTERNATIONALE.

At the Conference of the *Fédération Aéronautique Internationale* held in Rome in October last, the Royal Aero Club was represented by Lieut.-Col. M. O'Gorman, C.B.

PARACHUTES.—It was decided that the carrying of parachutes should be compulsory in all attempts on Records, with the exception of Speed Records. A minimum weight of 10 kilograms per parachute must be allowed and is not included in the "Weight of Merchandise" carried.

[This is exactly what one would expect from the F.A.I. or the Royal Aero Club. In America, where practical men run things, speed pilots are obliged to wear parachutes. Their instructions are that if the engine stops over bad ground they are to "zoom" the machine by its own speed as high as it will go, and then get out and let the machine crash.—C. G. G.]

GREATEST LOAD CARRIED TO 2,000 METRES.—The present record is 6,000 kilograms. It was decided that additional load should go up in steps of 500 kilograms.

These Regulations will come into force on Apr. 1, 1927.

THE SCHNEIDER TROPHY.—The proposal of the Royal Aero Club that the Schneider Trophy Contest should be flown bi-annually instead of annually was adopted. Subsequent to this decision the Contest for the Schneider Trophy took place in America, and Italy won the Cup. The next race will therefore be held in 1928 in Italy.

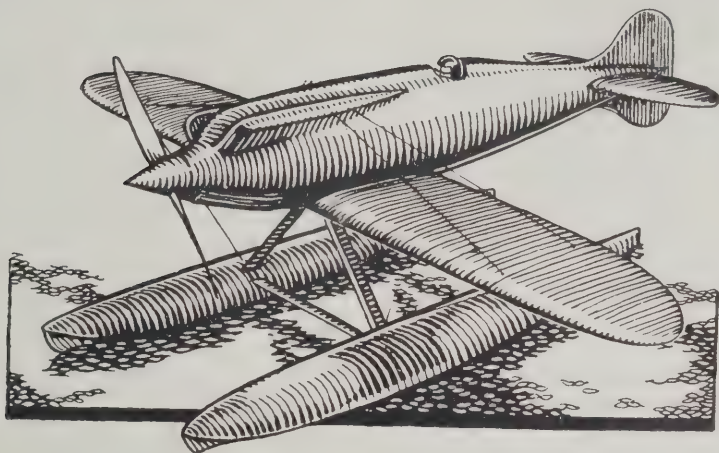
WOMEN PILOTS.—It was decided that Women Pilots are eligible for all records. The question of creating a distinct class for women pilots was referred to the January Conference to be held in Paris.

AGENDA.—The following questions were also referred to the Paris Conference to be held in January:

- (1) Uniform method of arriving at value of Aeroplanes for Custom purposes.
- (2) Slow speed requirements for aeroplanes attempting high-speed records.
- (3) Classification of Light Aeroplanes for record purposes.
- (4) Instruments for recording temperature in height records.
- (5) Automatic Timing for speed records.



THE SCHNEIDER TROPHY, 1926



The Reed airscrew has again been used by the winner of the International Schneider Trophy.

The present holder, Major di Bernardi, flying a Macchi "39" Seaplane, completed the course at an average speed of 246.5 miles per hour. Thus a Reed metal propeller has been used by the winners of this Trophy for the third time in succession.

All records for the highest speeds obtained for both aeroplanes and seaplanes are held by aircraft fitted with Reed Airscrews.

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THE ROYAL AIR FORCE.

The London Gazette.

Nov. 19.

GENERAL DUTIES BRANCH.—The following are granted perm. comms. in the ranks stated (Nov. 1):—Flt. Lt.—F. H. Shales. Flg. Off.—H. N. Thornton.

Plt. Off. J. H. Barringer is promoted to the rank of Flg. Off. (Oct. 14).

The following Flg. Offs. are transferred to the Reserve:—CLASS A.—W. G. Nicholls (Nov. 18). CLASS C.—N. H. F. Unwin (Nov. 13).

Flg. Off. S. T. Littleton resigns his perm. comm. (Nov. 17). The following resign their S.S. comms. (Nov. 17):—Plt. Off. J. T. C. Skellon, Plt. Off. on probation L. S. S. Tunks. The S.S. comm. of Plt. Off. on probation A. E. Scott Moore is terminated on cessation of duty (Nov. 17); G. H. Morris, Lt., R.M., Flg. Off., R.A.F., relinquishes his temp. comm. on return to duty with the Royal Marines (Nov. 10); Flg. Off. R. L. Yates (Lt., Royal Scots Fus.), relinquishes his temp. comm. on return to Army duty (Oct. 26).

STORES BRANCH.—Flg. Off. on probation O. G. Ridley, M.C. (Maj., R.A.R.O.), is confirmed in rank (Oct. 6).

ACCOUNTANT BRANCH.—Flg. Off. B. E. Hume Wright is transferred to the Reserve, Class C. (Nov. 15).

MEDICAL BRANCH.—Flg. Off. W. A. Beck, M.B., D.P.H., is transferred to the Reserve, Class D.2 (Nov. 19).

MEMORANDUM.—R. W. Stevens is granted a temp. comm. as a Flt. Lt. (Legal Officer) (Nov. 11).

RESERVE OF AIR FORCE OFFICERS.—The following Plt. Offs. are promoted to the rank of Flg. Off.:—R. N. Bullock (June 17); A. R. J. Savage (Sept. 24); John Gallacher (Oct. 3). Plt. Off. on probation F. R. Matthews is confirmed in rank (Nov. 9). The following Flg. Offs. are transferred from Class A to Class C:—H. MacMillan (Nov. 12); A. D. Drysdale (Nov. 13). Flg. Off. F. R. Steggall, D.C.M., relinquishes his comm. on completion of service (Oct. 24).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—The following to be Plt. Off.:—No. 600 CITY OF LONDON (BOMBING) SQDN.—G. de H. Vaizey (Nov. 16).

All the Difference.

The *Morning Post* of Nov. 16 states:—

A remarkable speech made by Sir Hugh Trenchard, Commander-in-Chief of the Royal Air Force, before a meeting of the Cambridge University Aeronautical Society in April last year, is being used as a weapon by advocates of wholesale disarmament.

At Saturday's session of the National Peace Congress at York, Professor Philip Baker, of London University, was quoted by a Socialist paper yesterday as saying: "Sir Hugh Trenchard, head of the R.A.F., has said that if he had his way he would abolish aviation, civil and military, altogether. He believed the evil which would be wrought by aviation would be incomparably greater than any good it could bring."

At the Air Ministry yesterday, a *Morning Post* representative was given the following version of Sir Hugh Trenchard's speech: "I do not want you to think that I look upon the air as a blessing altogether. It may be more of a blessing for this Empire than for any other country in the world. I feel that all the good it will do in civil life cannot balance the harm that might be done in war by it, and if I had the casting vote, I would say, 'Abolish the Air.' I feel it is an infinitely more harmful weapon of war than any other, and it is a terrifically powerful weapon."

The Versatile M.O.

The following new clause has been added to paragraph 1483 of King's Regulations for the R.A.F. by Amendment List 24 of November, 1926:—

A medical officer granted a permanent or short service commission, provided he is medically fit, may be given such training in flying as is possible and when qualified in accordance with Appendix III will be allowed to wear the flying badge on service dress. He will not, however, be taken off duty to enable him to qualify and his training must therefore be arranged by the air or other officer commanding as opportunity occurs. When a medical officer is placed under flying instruction, notification will be sent to the Air Ministry by the unit concerned through the usual channels.

King's Regulations does not lay down that a short-service officer of the General Duties Branch may, in the course of his vocational training, practise medicine or surgery "as opportunity occurs" in the hospital of his Unit. Apparently this would not be encouraged owing to professional jealousy. On the other hand, a doctor who can take a machine and fly it to the station Rugby ground or other scene of his week's labours, replace a few joints, etc., and fly back to the mess will be an acquisition to any Air Force station.

Rugby in the R.A.F.

Two trial matches have been held by the R.A.F. Rugby Union, one at Spittlegate and one at Andover. A third game will be played on Nov. 24 at Cranwell between a trial side and the R.A.F. Cadet College. The sixty players selected for the first two trials consisted of 30 Officers and 30 Other Ranks.

The fixtures of the Representative side for the coming season are:—

Jan. 5.—Guy's Hospital, at Honor Oak Park. Jan. 19.—Cambridge University, at Cambridge. Jan. 22.—Bristol, at Bristol. Jan. 26.—Leicester, at Leicester.

Feb. 5.—Bath, at Bath. Feb. 19.—Royal Navy, at Twickenham. Mar. 2.—Oxford University, at Oxford. Mar. 9.—Civil Service, at Chiswick. Mar. 17.—Gloucester, at Gloucester. Mar. 26.—The Army, at Twickenham.

Sq. Ldr. J. C. Russell, D.S.O., has been re-elected to Captain the XV and Flt. Lt. O. Bryson, M.C., D.F.C., to act as Vice-Captain. (This is official, and all rumours to the contrary are hereby written off.)

One gathers that the trials showed a high standard of forward play but a weakness in defence particularly in tackling. Good tackling has, in the past, been rather a strong point of the R.A.F. backs and those who are coaching Station teams will do good work if they will give special attention to this important art, and having laid down the first principles of sound defence see that they are invariably carried out.

No. 3 Squadron, R.F.C. and R.A.F.

The Third Re-Union Dinner of No. 3 Squadron, R.F.C., and No. 3 (Fighter) Squadron, R.A.F., will be held at the Trocadero on Wednesday, Dec. 1, at 7.45 p.m., for 8 p.m. Air Marshal Sir John Salmund, K.C.B., C.M.G., D.S.O., A.D.C., will be in the Chair.

Tickets, 12s. 6d. each, are obtainable at the Dinner.

A Happy Evening.

On Nov. 19, Wing Cdr. Maycock, O.B.E., Officer Commanding, and the Officers of the Marine Aircraft Experimental Establishment at Felixstowe, gave their first Annual Dinner to the British Aircraft Constructors. One hopes it will not be the last.

The idea was to get the constructors and the official experimenters, including the test pilots, better acquainted. The entertainment thoroughly achieved its object.

The dining room of the Mess was transformed for the occasion into "Ye Mariners' Aircraft Arms," complete with sawdusted floor and tankards, and an English Christmas Dinner of the best was served. After dinner every guest had to make a speech strictly limited to five minutes, and anybody who exceeded the time limit was mercilessly "hampered" by the Vice-President.

Subsequently, in the ante-room, the process of becoming better acquainted made considerable progress. One cannot be standoffish in a rugger scrum, except as a stand off half. And from what one heard of various conversations a considerable amount of mutual enlightenment must have resulted from the gathering. Casualties, on the whole, were few, the worst damaged being an Air Ministry official, who presumably caught it from both sides. One feels that the gathering will do much towards helping the progress of British Aviation.—C. G. G.

Air Affairs in Parliament.

CIVIL AVIATION SUBSIDIES.

In the House of Commons on Nov. 15, in reply to a question by SIR H. BRITAIN, the SECRETARY OF STATE FOR AIR, said that the total sum allocated to the development of Civil Aviation in Air Votes for the current year was £462,000. In addition, £362,000 was being expended on airship development, which was, to a large extent, for civil aviation purposes. It was difficult to give exactly comparable figures in respect of France and Germany, but the following were approximate:—France, 78,175,000 francs. Germany, 24,661,500 Reich marks. Actual subsidy payments to civil air transport companies were as follows: Great Britain £167,000, France 59,500,000 francs, Germany 8,371,000 Reichmarks.

The policy of H.M. Government was to spare no effort to place the operation of civil air transport on a commercial footing as early as possible.

CAPTAIN MACDONALD suggested that the large subsidy paid by the German Government for civil aviation enabled Germany to control and operate 75 per cent. of the civil air lines in Europe.

COMMANDER BELLAIRS thought that the policy of the development of civil aviation would be improved if the administration were transferred to the Board of Trade.

R.A.F. FLYING ACCIDENTS.

In the House of Commons on Nov. 22, in reply to a question by COL. GREYTON, the SECRETARY OF STATE FOR AIR said that the number of fatal accidents in the R.A.F. for the period Jan. 1 to Nov. 18, 1926 was 49, and for the corresponding period in 1925 was 36. The number of deaths in the two periods were 78 and 50 respectively. The number of aircraft reported by Nov. 18 as written off charge as a result of crashes were 230 in 1926 and 212 in 1925.

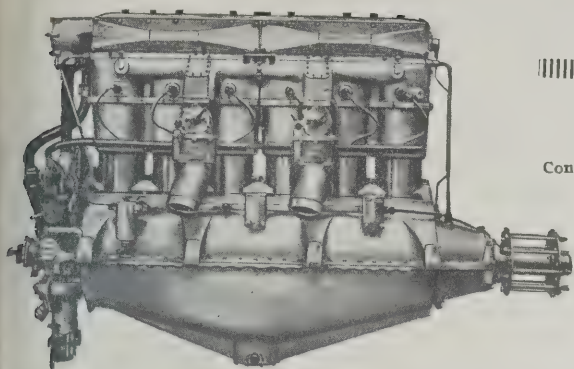
Referring to the deaths in 1926, Sir Samuel Hoare pointed out that 15 had occurred in three accidents, two of which might be regarded as of an exceptional character.

Sir Samuel Hoare added that the amount of flying in 1926 to date was materially in excess of that for the corresponding period in 1925.

In reply to Col. Greyton's question as to what steps were being taken to reduce the number of accidents, Sir Samuel Hoare said that in spite of continuous and careful scrutiny of every individual accident no general cause could be assigned. Many accidents were the result of a combination of causes. A mechanical failure, containing no element of danger in itself, but necessitating a forced landing, might be followed by a crash due to bad ground or an error of judgment.

All sides of the question of accidents were carefully watched, the number of accidents, the stations at which they occur, the time of year, the nature of the country, the type of machine, the medical and flying history of the pilot, the methods of training, etc. Every serious accident was investigated by a local court of inquiry and also by an inspector who reported to the Secretary of State.

Sir Samuel Hoare added that parachutes had saved several lives during the past year and endeavours were also being made to evolve more controllable machines and mechanical devices to increase the safety of flying. He pointed out that the constant improvement in speed and performance tended to make the result of an accident more serious. The question had his personal attention.



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE SUPERMARINE SOUTHAMPTON.

The first order given by the Air Ministry for the Southampton type of flying-boat was received by the Supermarine Aviation Works in August, 1924. The first of these machines was completed and flying in the middle of March, 1925, and was flown to Felixstowe for test on the day following its completion. It there completed its official trials in record time and without a hitch, showing so excellent an all-round performance, that it was almost immediately adopted as the standard twin-engined reconnaissance flying-boat for the Royal Air Force.

In the twenty-one months that have elapsed since the first Southampton was delivered a large number of the type have been put into service, and a very considerable number are still on order.

In September and October, 1925, a flight of Southamptons made a cruise of some 10,000 miles around the British Isles, during which the boats encountered extremely severe weather. Nevertheless they carried out their programme without a hitch, refuelling at sea and riding at moorings whenever they were not flying. This cruise formed the subject of a special communiqué issued by the Air Ministry, in which the reliability and the seaworthiness of the Southampton was very much emphasised.

In July, 1926, a flight of Southamptons carried out a cruise from Plymouth to Aboukir and back. On this cruise the boats operated as completely independent units, depending neither on prepared shore bases nor on parent ships. The cruise was completed without untoward incident, and to schedule, with the single exception that the flight from Marseilles to Plymouth was postponed one day on account of a northerly gale at Marseilles.

This cruise was again the subject of eulogistic report by the Air Ministry, testifying to the dependability of the Southampton.

The Supermarine Southampton is thus by now a type which has seen extended service. It has already been frequently illustrated both in the technical and the daily press, and must be thoroughly well-known by sight to hundreds of members of the public at home and abroad. Nevertheless it is only within the past few weeks that it has been permissible to give any detailed description of its structural features, its dimensions or its performance.

The general form of this type of flying-boat is, as already mentioned, now fairly well-known. The machine is of the central hull, biplane wing, twin-engined type, fitted with two Napier Lion Series V engines of 470 normal and 502 maximum b.h.p., mounted between the wings.

THE HULL.

The hull is of the Supermarine circular flexible type, normally of timber construction. Duralumin hulls are now under test at the Supermarine Works with very promising results. In course of time these will doubtless be available to replace the present wooden type.

The normal timber hull consists of an inner body onto which is built the planing bottom, steps, etc. This inner body consists of large number of fore and aft stringers of spruce, supported on oval hoops or saddles of American elm, and doubly planked by an inner skin of cedar and an outer skin of mahogany, with a varnished-on layer of fabric between skins.

The planing bottom is supported on spruce stringers with elm timbers, and is also doubly planked, an inner diagonal skin of cedar and a fore-and-aft skin of mahogany being used. Between these skins a layer of fabric is ironed on with Jeffries' Marine Glue. The side walls from the chines at the edge of the planing bottom to the main body are built on similar lines to the bottom and are also doubly planked.

The main body and the planing bottom thus constitute a complete double bottom running from the bows to the rear step, and the space between is sub-divided into ten water-tight compartments. The steps, main and rear, are built onto the hull in such a way that they may be easily repaired or completely removed and replaced. All fixings in the hull are of either copper or brass, and are "through-fastened" throughout.

The inner body is entirely free from any form of cross-bracing and provides a clear passage way from bow to tail.

THE WINGS.

The wing structure as a whole is a unit entirely independent of the hull. The lower centre section sits on top of the hull, and is there fixed by what are essentially only locating fittings, the main loads being carried by spar bracing tubes running down from the centre section spars to specially stiff frames in the hull. This differs considerably from the normal practice of building the lower wing-roots into the hull, but has obvious advantages both for constructional and for repair purposes.

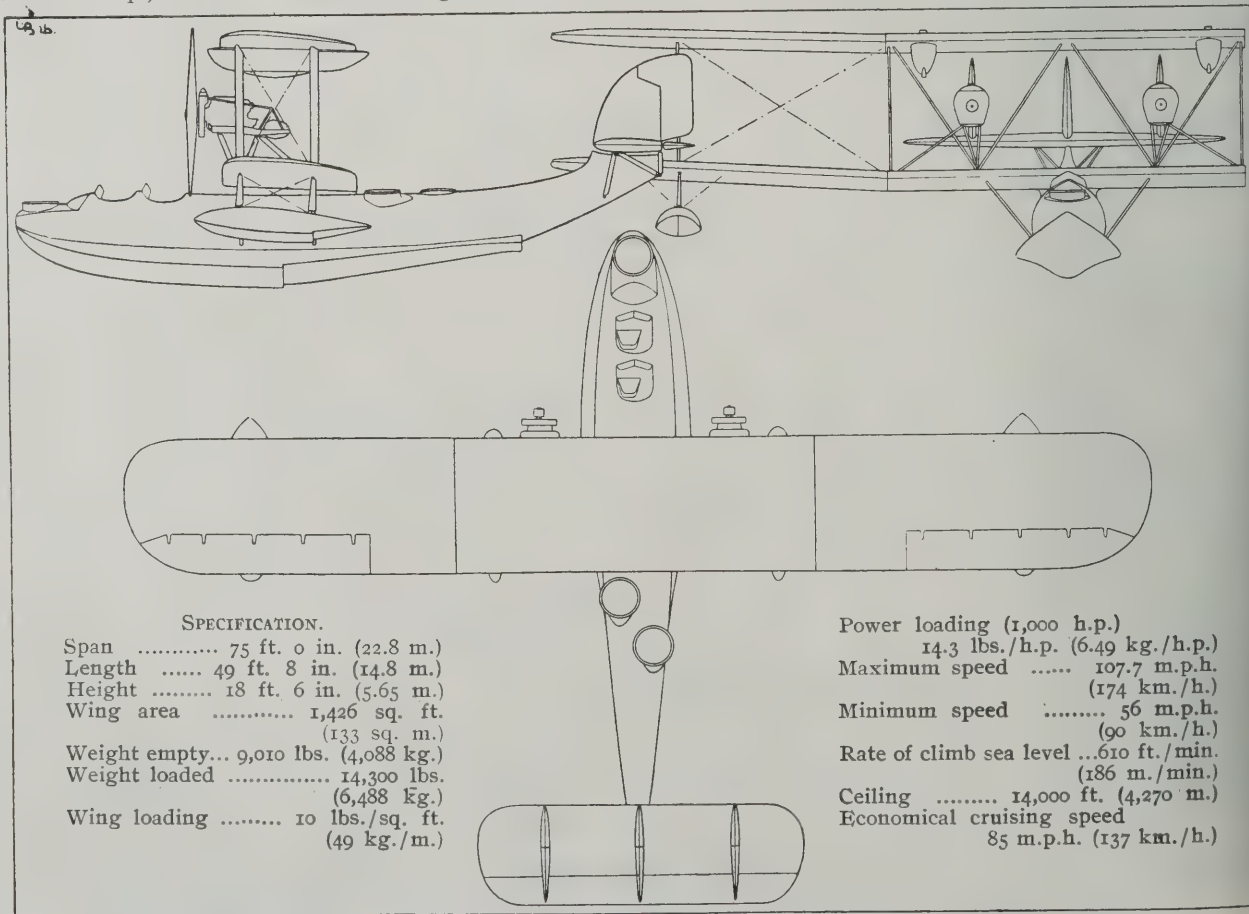
Upper and lower centre sections are of equal span and the whole of the interplane bracing over their span is of rigid tubular type. This bracing system in front view resembles the letter W with the addition of an extra vertical at each end of the W. The outer sections of the wings are braced in the usual way with one set of vertical struts and streamline wire cross-bracing.

Ailerons balanced by the inset-hinge method, and operated by a de Havilland differential gear are fitted to both top and bottom wings.

The normal wings are of timber with spruce and three-ply box-spars and spruce girder ribs. The lower centre section is entirely covered with ply-wood on its upper surface, and may be walked over without ill-effect and the leading edge section of the whole of the surface is also ply-wood covered to maintain a fair entrance form under all conditions.

THE TAIL.

The tail unit consists of a large fixed tail plane of a deep symmetrical section, an undivided elevator and triple fins and rudders carried from and above the tail plane. The fins are built into the tail plane and



THE SUPERMARINE SOUTHAMPTON FLYING-BOAT.—(Two 470 h.p. Napier Lion V engines).

THE DE HAVILLAND "MOTH" SEAPLANE

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depend on no external bracing, and the tail plane itself is carried above the upswept end of the hull by a pin joint on the front spar and by a screw-jack incidence adjusting gear at the rear spar.

It is further supported by four bracing tubes, the two rear ones also attached to the screw-jack gear and the two front ones to fittings on the hull side. These bracing tubes do not extend outwards from the centre line more than three feet and are the only external bracings on the tail unit.

Thanks to this arrangement the gunners in the aft cockpit have a clear field of fire below the tail, and can safely fire above the tail-plane between fins and rudders. Even if a stray shot or two penetrates tail-plane or fins, little harm is likely to result.

The outboard rudders are arranged to be within the slip-stream of their respective engines.

THE POWER PLANT.

The Napier Lion engines are mounted about halfway up the gap on a structure which is independent of the main wing-bracing and can be removed without disturbing the wings. This engine mounting—which is shown in a sketch—is supported from the lower wing alone, and carries the engines so that their centre of gravity is well forward of the leading edge of the wings.

Owing to this arrangement slings may be attached to the engines and they may be lifted straight off their bearers without dismantling any part of the wing structure. On one occasion an engine was

changed in a Southampton by mooring the boat alongside the quay at a port on the Southern coast, and using one of the Southern Railway's steam cranes to remove the faulty and replace a sound engine.

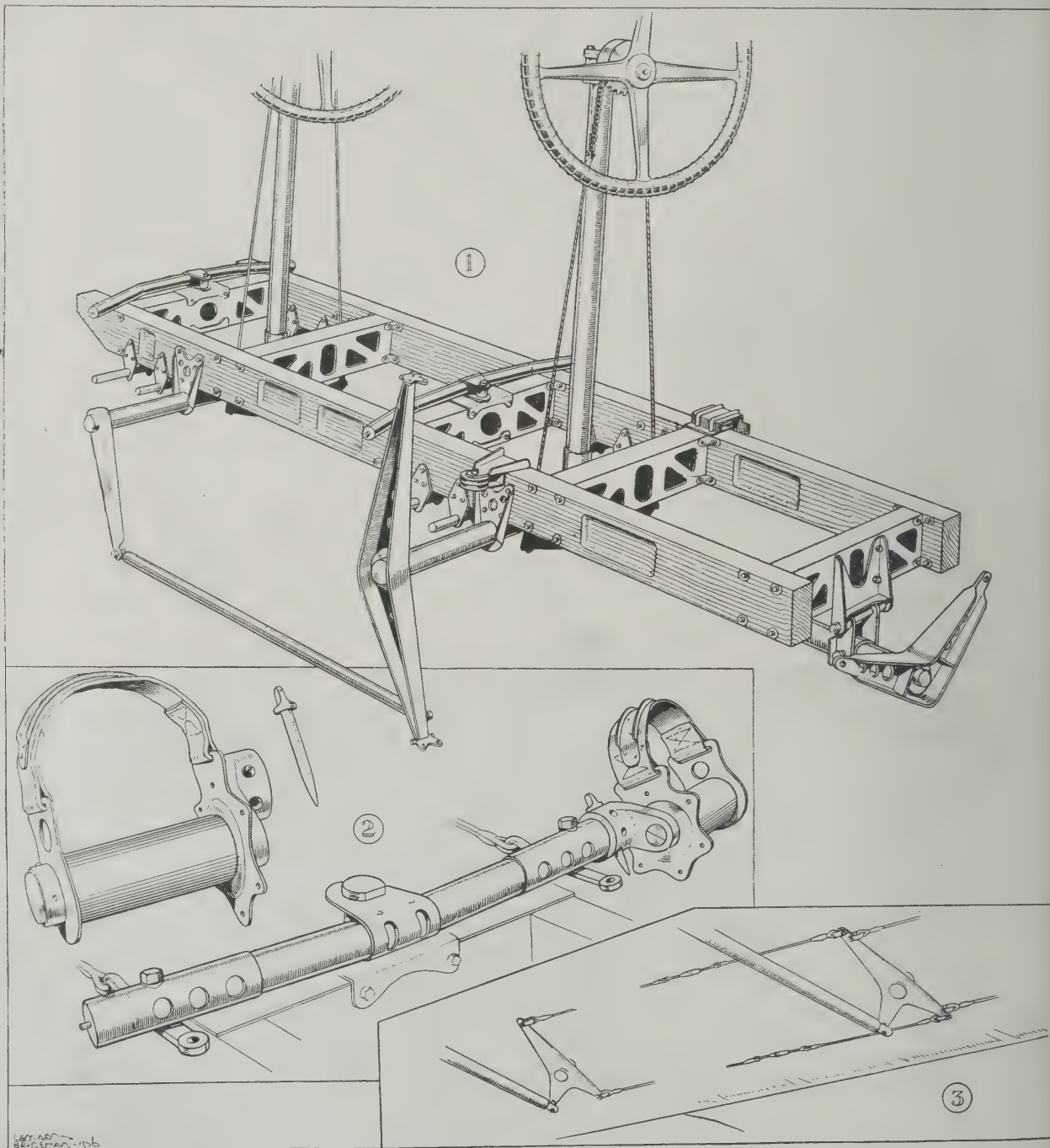
The whole engine unit, mounting, oil tanks, radiators and instruments may be removed in a similar manner after disconnecting petrol and control connections.

Petrol is supplied from two tanks, carried below the upper centre section outboard of the engines themselves. These tanks are cross-connected, so that either engine may be fed from either tank, but this cross-connection is carried out by pipes running through the leading edge of the lower centre section, and no petrol whatever is taken into the hull. The various petrol cocks controlling the system are fitted in the leading edge and are controlled by push and pull rods and torque tubes from the cockpits.

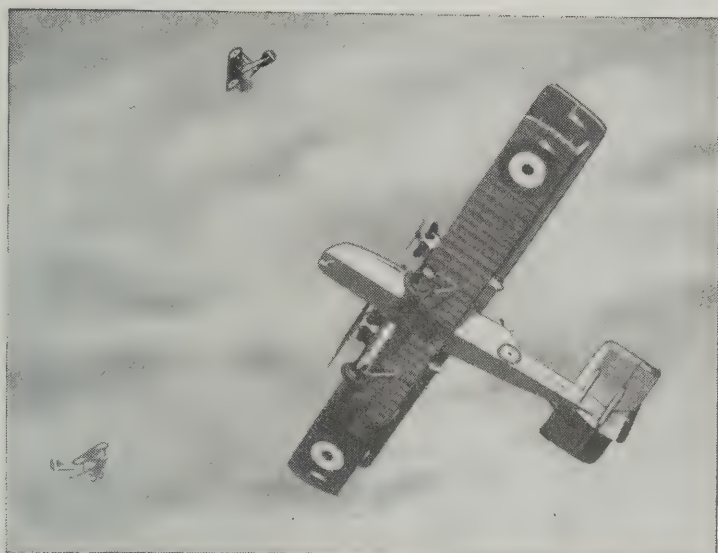
One fifteen-gallon oil tank is fitted behind each engine and a flat radiator with 7 m/m. x 110 m/m. tubes is slung on rubber buffers from the engine bearers ahead of the engine. The radiators contain adequate reserve water for any flight within the normal capacity of the boat, and require no external header tanks. Hand starting-gear and priming-pumps are fitted, and are easily accessible from the lower centre section.

EQUIPMENT.

The Southampton normally carries a crew of five men. In the extreme bow is a cockpit for an observer or bomber which serves also

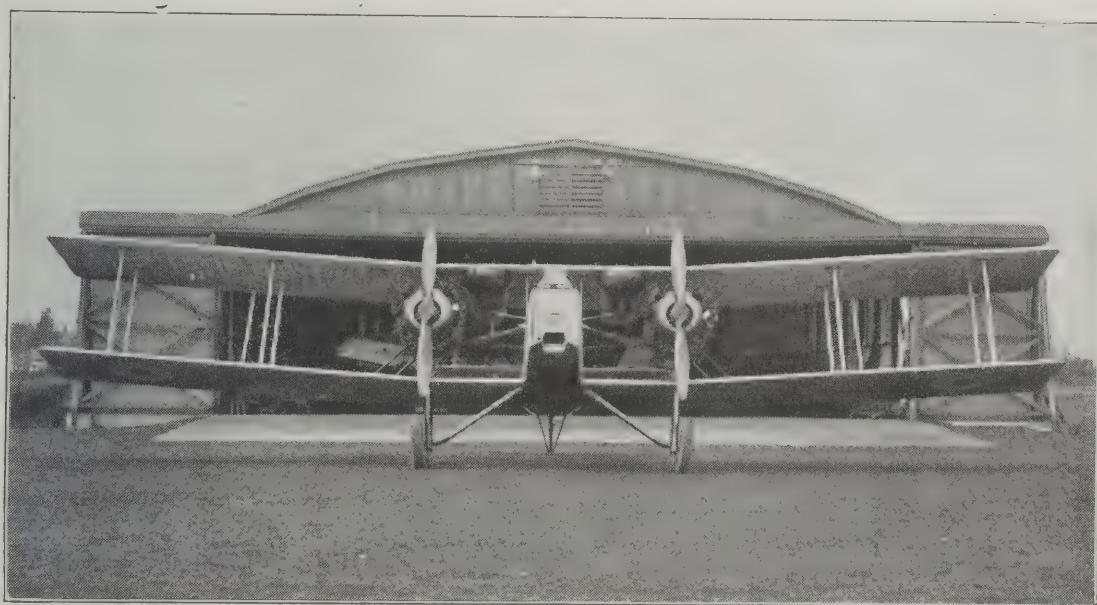


SOUTHAMPTON CONTROLS.—(1) The complete control unit for the pilot's and observer's cockpit. The two seats (not shown) are supported on the frame of this unit. (2) The rudder-bar, showing the adjustment for leg-length. The pedals are in the form of cranks, which fit over the ends of the rudder-bar. A locking pin, passing through both crank and rudder-bar, secures the pedal in any one of six positions. (3) The aileron-operating levers on the lower wing. The cranks connected to the aileron pull-and-push rods are not at right angles to the arms coupled to the control cables, which secures the de Havilland differential type of aileron movement.



THE Boulton
& Paul Bugle.
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Construction.

The Boulton & Paul Bugle in combat



Boulton & Paul Ltd

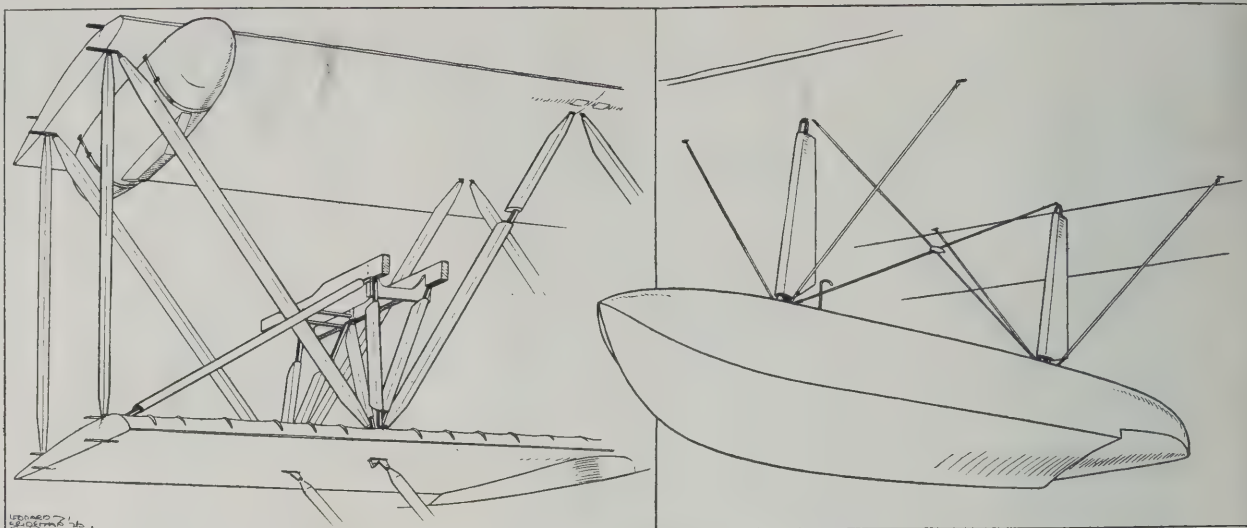
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Contractors to the Air Ministry, etc.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



SOUTHAMPTON DETAILS.—Left, one engine mounting, and one half of the centre section bracing system. The whole engine mounting is independent of the wing bracing system. One main petrol tank is also shown. Right, a wing-tip float with its supports. It will be seen that this float is unusually long, small in frontal area, and is provided with a step.

for mooring and casting loose. This cockpit is fitted with the standard Scarff gun ring, and storage for ammunition, and is equipped to take all gear and equipment required for bombing purposes. A hinged seat and a small hinged writing table are also provided.

Behind, with seats on the port side, are two cockpits, for pilot and navigator, both completely equipped with flying controls and instruments. The whole of the dual control gear, together with the seats, is made as a unit which can be removed bodily from the hull. The general scheme of this unit and many of its details are clearly shown in a sketch.

Behind these cockpits and below the wings is a large space in the hull for the use of the navigator. Here is provided a comfortable armchair, a large table and racks for instruments. Directly behind this space is the wireless gear.

Behind the wings are two after gun positions. These are not on the centre line of the hull but are offset one to each side, so that the gun on each may be used to fire at targets vertically below the hull. In addition, owing to the absence of any bracing on the tail more than three feet out from the centre line, these guns can fire aft and inside of a line parallel to the centre line, so that the line of fire from the two guns can converge on a target directly behind and comparatively close up. It is not too much to say that the Southampton has no such a thing as a blind spot.

LAUNCHING AND BEACHING CHASSIS.

For launching and beaching purposes the Southampton is equipped with a detachable undercarriage which can rapidly be attached to or detached from fittings provided at the ends of the lower centre section to hull bracing struts. This chassis in many ways resembles those normally fitted to amphibian flying-boats, but is not carried in the

air. It is extensible by means of handwheels fitted in one of the chassis struts, so that it may be floated into position with the wheels up, and may then be screwed down till the wheels are below the keel level or vice-versa.

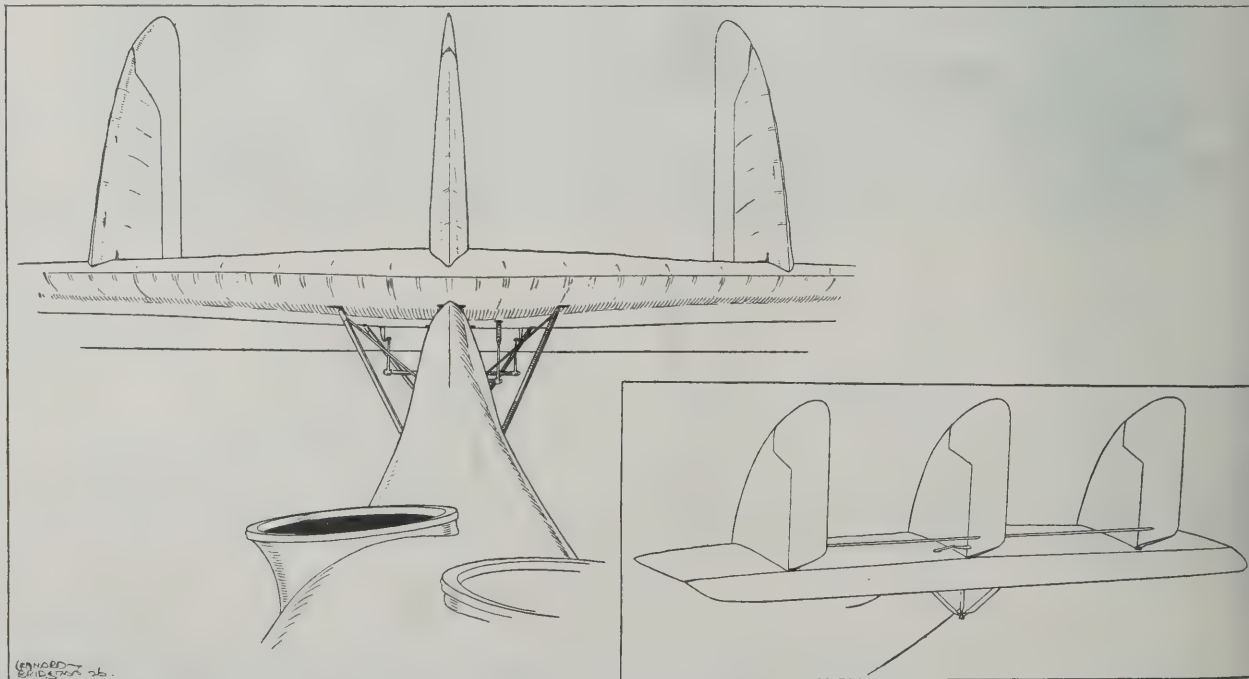
THE CAPABILITIES OF THE SOUTHAMPTON.

In the specification which is given on the general arrangement drawing of the Southampton the main dimensions, weights and performance of the type as normally loaded are given. The performance figures are those attained on the official tests of the original of the type at Felixstowe and even better results have been attained by subsequent boats of the type in contractors' trials.

It will be seen from the figures in this specification that at the normal full load weight of 14,300 lbs. the total disposable load is 5,920 lbs. For normal reconnaissance work this load is made up as follows:—Crew (5), 900 lbs., armament and equipment, 1,130 lbs., fuel (400 galls., equivalent to 680 miles at 85 m.p.h.), 2,960 lbs., and oil (30 galls.), 300 lbs. By reducing the crew to four men, the fuel to 300 galls., and oil to 22 galls. a load of 1,000 lbs. in bombs may be carried.

The Southampton has however been tested at the overload all up weight of 15,700 lbs. It is therefore possible to carry with full reconnaissance load extra fuel to the extent of 1,400 lbs., raising the range to nearly 1,000 miles, or to carry a largely increased bomb load.

As a commercial seaplane carrying a crew of two, and removing all essentially military equipment, the Southampton at normal full load would have a combined fuel and pay load capacity of 4,490 lbs. Carrying fuel for 680 miles this would give a capacity for eight passengers and luggage, or with fuel reduced to 340 miles range the capacity would become fourteen passengers and luggage. Which is better than the land machines in common use.



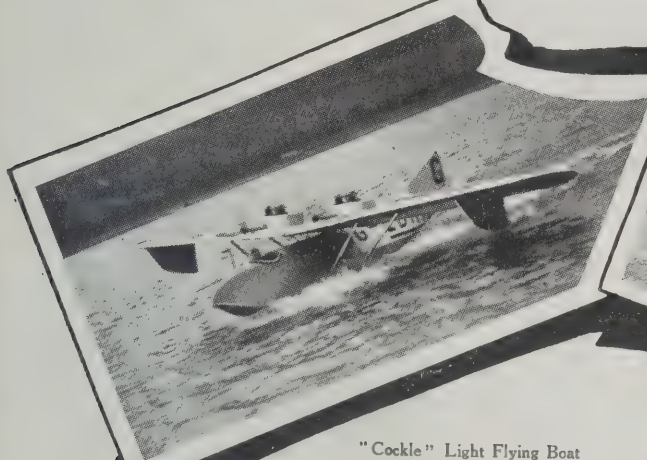
THE SOUTHAMPTON TAIL.—The larger sketch shows the freedom of the tail unit from bracing, and the remarkably clear field of fire from the after gun positions, both of which are shown. The smaller sketch shows how the rudders are interconnected entirely in the shadow of the tail plane from the gun position.

Leading the World

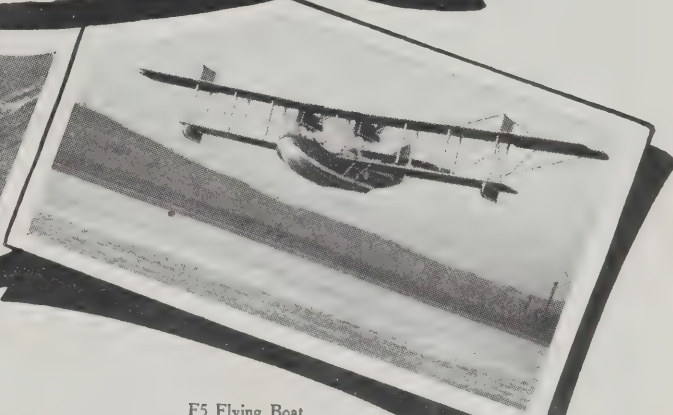
An extract from
"THE TIMES"
of 20th August, 1926.

Short Brothers are now
designers and constructors of all-metal floats.
Other all-metal aircraft are in construction,
and Great Britain may well lead the world in
the all-metal construction of seagoing aircraft
as a result of the independent work done at
Rochester during the last few years.

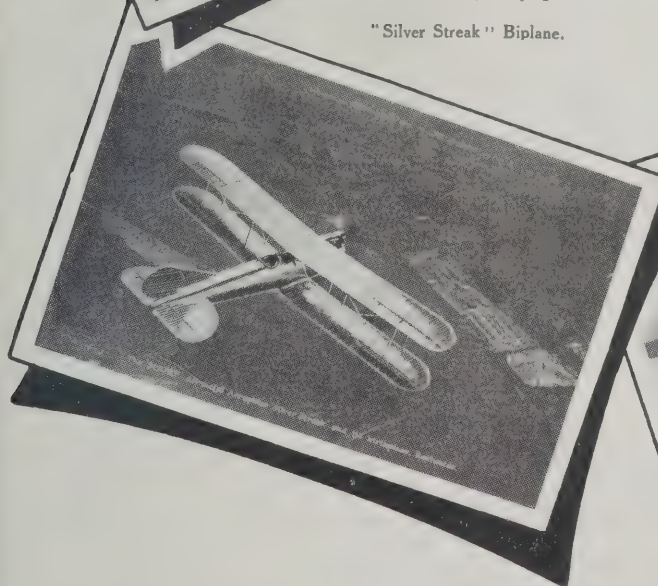
PEAKTOWN ON THE



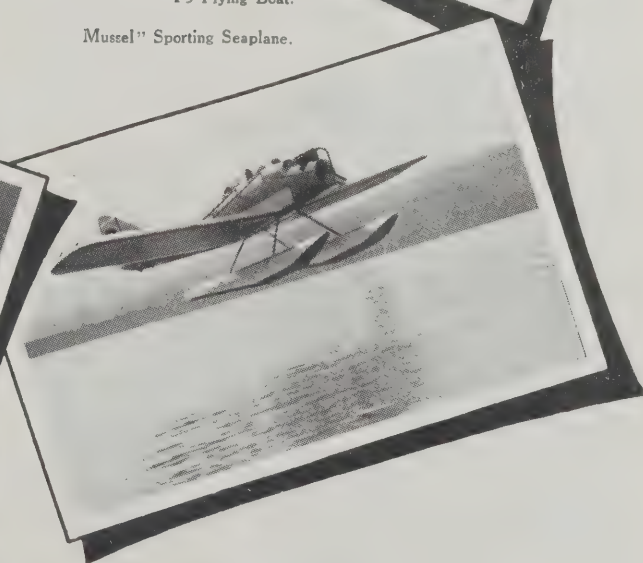
"Cockle" Light Flying Boat



F5 Flying Boat.



"Silver Streak" Biplane.



"Mussel" Sporting Seaplane.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIRSHIPS—PAST AND FUTURE.

On Wednesday, Nov. 17, delegates to the Imperial Conference, including Mr. S. M. Bruce, Prime Minister of Australia, Mr. Mackenzie King, Prime Minister of Canada, Mr. Coates, Prime Minister of New Zealand, Mr. Havenga, Minister of Finance, South Africa, accompanied by Sir Samuel Hoare, Secretary of State for Air, Air Vice-Marshal Sir Geoffrey Salmond and Air Vice-Marshal Sir William Sefton Brancker, were entertained at the Royal Airship Works, at Cardington. A considerable number of Press representatives were also permitted to attend.

The programme laid down for the occasion was to have included inspection of the new mooring mast, the releasing of R.33 therefrom, a demonstration of the dropping of two Grebes from R.33, inspection of the Royal Airship Works, including a view of the experimental section of the new airship R.101, ending with a free lunch.

It was announced that Press representatives would not be permitted to inspect the experimental section of R.101 as these were held to conceal a trade secret of very real value, and the passes to Press representatives were issued on the understanding that no description of this ship other than was officially supplied to them was to be published.

The programme was not carried out. A strong and gusty wind blowing across the mouth of the shed all the morning made it risky to take R.33 out at all.

Therefore, after having inspected the mast, the whole party, Press included, were taken into the shed to inspect R.33, which had the two Grebes attached ready for launching. A powerful guard of police was stationed at the end of the shed to keep the Press representatives from approaching too closely to the section of R.101. They were however permitted to go close enough to enable one to gather quite a good deal of the details of construction.

Thereafter the fabric sheds were visited, where the process of cleaning gold-beater's skin, building the skins up into sheets, and the cementing of these sheets to the fabric to form gas bags for R.101 was in progress.

An exhibition of films, showing the launching and attaching of the D.H.53 from and to R.33 in flight, and of the launching of the two Grebes from the same ship, came next.

During lunch it was announced that the wind had dropped and that R.33 was coming out, and that the Grebe-dropping show would take place as soon as possible. Unfortunately the clouds were nowhere higher than about 800 feet and there were only quite small clear patches as low down as 600 feet. So after having cruised around in semi-invisibility for about an hour, R.33 signalled that there was no hope of getting a reasonably clear height in which the aeroplanes might be slipped and that she was about to land—an operation which was carried out without a hitch.

The following information, mainly abstracted from the notes supplied to the Press by the Air Ministry, represents such useful information as may be published concerning the various exhibits at Cardington.

THE MOORING MAST.

The new mooring mast designed for use by R.101 and R.100 (which is being built by the Airship Guarantee Co. Ltd.) is a steel structure 200 ft. high, with a base 70 ft. square, designed to take a pull of up to 30 tons in any direction applied to the mooring cone at the top. Access to the platform at the top is given by stairways and by a central lift with a capacity for eleven passengers and a lift attendant.

At the base of the mast is a machinery hut. This contains the main winch for hauling the airship to the mast, two auxiliary winches for the side guys used to steady the ship during the process, fuel and ballast water pumps to refuel and ballast the ship at the mast, and the motors for the lift.

A ten-thousand gallon underground fuel tank is provided, and a 12-inch gas main runs up the mast to re-gas the ship at moorings.

The winch gear is steam-driven, but electrically controlled from the top of the mast. Steam is provided by two oil-fired Babcock and Wilcox boilers, and the whole plant can be operated by a very small crew.

R.101.

R.101 has been designed to have a gross lift of approximately 150 tons, 70 tons of which are to be available for crew, fuel and paying load. She is to have a speed of at least 70 m.p.h. at 5,000 ft., an economical cruising speed of 63 m.p.h., and a cruising range without refuelling of about 4,000 miles.

The same requirements apply also to R.100, and within these limits the designers of the two ships have been given a perfectly free hand.

The design of R.101 is now in a very advanced stage, and construction of the structural members is in progress. It is not however expected that erection of the ship proper will begin until some time next year.

The ship will be 730 ft. long with a maximum diameter of slightly over 130 ft. and an overall height over control car of 140 ft. She is to be fitted with five engines carried in five outboard engine cars, each of about 600 h.p. These engines are being developed by Wm. Beardmore and Co. Ltd., and are to be of the heavy oil type.

The frame structure of R.101—although it resembles previous rigid airship practice in that it consists of ring frames tied together with longitudinals—is in detail entirely novel. Owing to the very great increase in the size of this ship it has been found practicable to use steel as a structural material without the necessity of employing material of very small gauge. The main hull girders are throughout of a compound construction combining steel and duralumin.

Instead of the component girders being assembled by rivetting them together in place, the girders of R.101 have standard end fittings which are bolted to standard joint fittings of stamped duralumin.

As a result the assembly of the frame will be possible at a very rapid rate as soon as the component members are delivered. It is believed that the assembly process will take but a few months.

The main rings of the structure, unlike those of previous airships have been so designed that no internal wire bracing in the plane of the ring is required. The absence of the usual cross-wiring at the end of each gas-cell has made it possible to use a new and improved system of net wiring to transmit the lift of the gas to the frame, and in addition the absence of bulkhead wires avoids certain very serious stresses which are imposed on the structure when the ship is pitched at a steep angle or when one gas-bag is accidentally deflated.

When the ship is pitched the lift of the gas bags is transmitted in part to the bulkhead wires and tends to bulge them. When one bag is deflated the gas pressure in the bag at each end of the deflated bag tries to bulge and very large tensions are set up in the wires and transmitted to the frame.

R.101 is to be equipped with accommodation for one hundred passengers. This accommodation will be provided entirely within the body of the airship, as will also be the case with R.100.

The passenger space is amidships and at the bottom of the hull and will be on two decks. The upper deck will have a lounge with seats for the whole hundred passengers, a dining room seating fifty at a time, and the main passenger sleeping accommodation. Along each side of this deck there is to be a promenade with glazed sides giving an excellent view outwards and downwards.

On the lower deck there will be a smoking room, kitchens with a lift to the dining room, the balance of the sleeping quarters, and the crew's quarters. The sleeping accommodation will consist of two and four-berth cabins, shower baths are to be fitted.

Provision is to be made for dancing and deck games, etc. (This it may be remarked will be eminently necessary. Travel by airship in fine weather in the absence of adequate means for recreation is likely to be one of the most boring and monotonous methods of passing the time that can be conceived. In bad weather passengers are less likely to get scared if they can be kept amused.)

The control cabin is ahead of the passenger space, built into the hull, but projecting slightly below the main lines thereof.

EXPERIMENTAL WORK.

In a ship so entirely outside the range of previous experience, both as to size and as to detail design, as R.101, a very large amount of experimental work has been necessary to check the designers' calculations. This experimental work has been mainly of two types.

The one was purely aerodynamic in order that the air loads which might be imposed on the structure could be assessed with reasonable certainty. The only practical method of discovering what these loads were likely to be in the case of a new design was to make experiments with a model.

When the design of R.101 was authorised however there was very much room for doubt as to how far the results of model tests could be relied upon. Consequently a systematic series of tests were made upon R.33 in the air and these have been compared with laboratory tests on a model of the same ship. It is said that the results are such as to justify the use of model results as a basis for design.

The other type of experiment related to the problems of designing the structural members and of so proportioning them that the ship shall be adequately strong.

An airship frame is an extremely complicated affair, and strength calculations in such a case present a very formidable problem. Ordinary engineering stress calculations are almost invariably approximations based on practical experience. Methods of stress analysis much more accurate than those usually employed in the drawing office are possible, but become impossibly laborious for practical purposes in so complicated a case.

It was therefore necessary to devise relatively simple methods of calculation for the airship structure which would give sufficiently close approximations to the truth to be safe. Such methods have been developed by a combination of theoretical work checked by laboratory experiments and have been used in the design of R.101.

But in order to put their reliability beyond reasonable doubt it has been thought desirable to put them to full scale test on the actual structure of the ship itself.

It is for this reason that the experimental section of R.101 previously mentioned has been constructed. This experimental section is an actual replica of the largest section of the ship, comprising frame rings and longitudinals. It is some 130 ft. 7 in. in diameter and 53 ft. 4 in. long. The gas bag contained by this bay has a gross lift of 16 tons.

This section was erected in the shed at Cardington and was loaded in divers manners corresponding to conditions in which the stresses in the various members had been calculated. A large number of sensitive extensometers were attached to individual members of the structure, making it possible to measure the actual deflection of the members under the given load conditions and to compare these with the calculated deflection. It is understood that the results have been remarkably satisfactory.

These tests having been completed, the experimental section is to be dismantled and individual girders are to be tested to destruction in order to discover what variations in strength may be expected to occur between ostensibly similar members as a result of imperfections in manufacture and non-uniformity of material.

CENTRIFUGAL CASTINGS.

Newton Chambers and Co. Ltd., of Thorncliffe Ironworks, near Sheffield, have acquired the sole patent rights in the Hurst-Ball Centrifugal Casting Process from Centrifugal Castings Ltd.

Among the standard products of their works are centrifugally cast piston-ring drums in cast iron. Piston rings made from these drums possess greater strength, uniformity and closeness of grain than can be attained by the normal method of casting. They are, it is claimed, easier to machine and of much more accurate dimensions than are sand cast drums, and it would appear that rings produced from these castings should be eminently suitable for use in aircraft engines.

VICKERS *Limited*

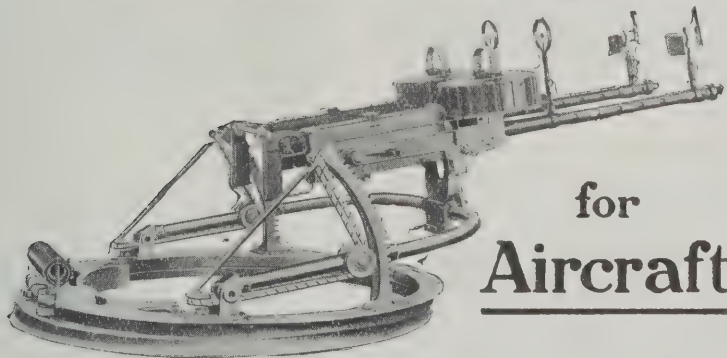
Aircraft Equipment

The finest aircraft may fail in its purpose if its equipment is unsatisfactory
The several items which will form the subject of this series of announcements are confidently recommended to the consideration of all Aircraft Designers, Manufacturers and Users, and to all concerned in the equipment of Air Organisations

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To reduce the Gunners' difficulties to a minimum by the provision of a Mounting that can be operated with ease, there is available the

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE LAST OF H.M.A. R.33.

A series of experiments with the airship R.33 began at Pulham Aerodrome, Norfolk, on Oct. 21. The first experiment consisted of releasing two standard Service single-seat fighter aeroplanes from the airship by means of a release gear. R.33 rose to a height of 2,000 ft., with the two machines.

Major G. H. Scott was in command of the R.33 and two officers of the Experimental Section, R.A.F., Farnborough, were the pilots of the aeroplanes. Actually only one of the machines (both Grebes) was released at Pulham as the engine of the second failed to start. The released machine, piloted by Flg. Off. C. Mackenzie-Richards, fell about 100 ft., and then came under full control. The second machine, piloted by Flg. Off. R. Linton Ragg, was released over Cardington.

The second series of experiments were of an acoustical nature, and consisted in detonating charges of powder and measuring the time taken for the sound to reach the ground and be reflected to the airship to estimate height from ground

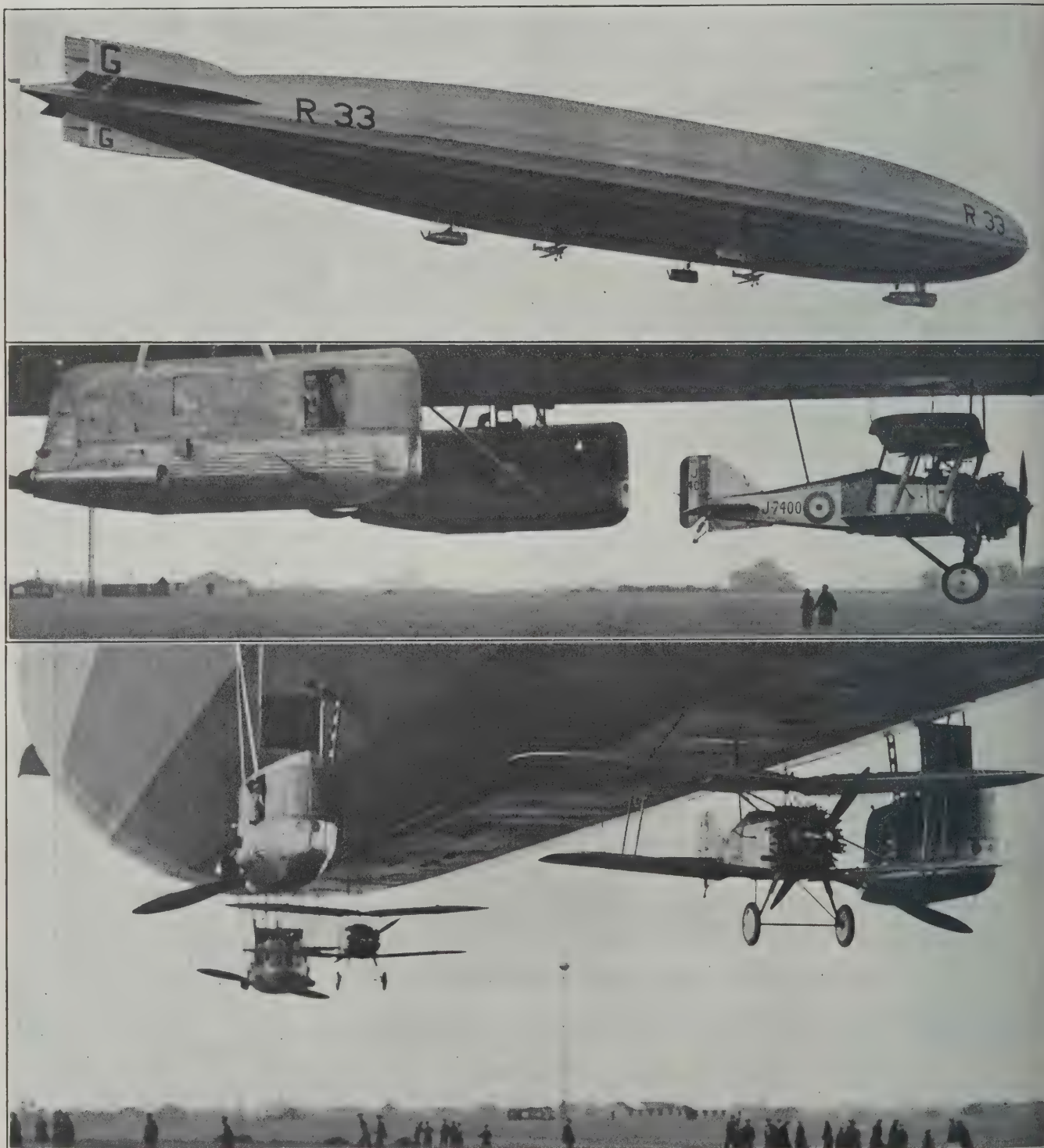
Experiments are also to be made with a modification of the standard Service parachute adapted for airship use.

The R.33 was housed at Cardington at the end of the day's experiments. She was found to have sustained slight damage as the result of a bumpy landing.

The first successful experiments in dropping aeroplanes from an airship in this country were carried out at Pulham late in the War 1914-18. A Sopwith Camel was dropped from the R.29 with no pilot on board and the controls locked. Later another was dropped safely with a pilot on board.

Early in the War Commander Usborne and Lient. De Courcey-Ireland were killed in an attempt to drop a B.E.2c from the envelope of a non-rigid airship.

Presumably these latest tests were made to try some improved form of attachment and dropping gear. But there is nothing new in dropping an aeroplane from an airship, as the Press seems to imagine. It has been done many times in the United States, as well as in this country and Germany.



UNITED SERVICES.—The old Naval and now Civil Airship R.33 with the two Gloster Grebes slung below. The middle picture shows the strut used to steady the fuselage up to the keel of the airship. The lowest picture shows the lateral struts to the wing. Above the centre cross-section may be seen the sling which pulls the wings and fuselage tight against these struts and is the sole support of the machine. To release the machine this sling is let go—a quick-release gear operated by the pilot.



The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
5. The petrol is carried in a 12-gallon streamline tank above the top wing, which gives a cruising flight of three hours. The oil is carried in a streamline tank on the port side of the fuselage.

FASTEST MACHINE in the GROSVENOR CUP RACE, 1926. Average Speed, 105.5 M.P.H.

WESTLAND AIRCRAFT WORKS,

(Branch of Petters Limited)

YEOVIL.

Specification.

Leading Weights and Dimensions:

| | |
|---|----------------------|
| Weight, fully loaded ... | 1,150 lbs. |
| Weight, light, without fuel and oil ... | 640 lbs. |
| Fuel capacity ... | 12 gallons. |
| Useful load apart from fuel and oil ... | 380 lbs. |
| Surface ... | 145 sq. ft. |
| Span ... | 30 ft. 8 ins. |
| Width, folded ... | 9 ft. 9 in. |
| Length ... | 20 ft. 5 in. |
| Petrol consumption ... | 20 Miles per gallon. |

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FLYING CLUBS. The London Aeroplane Club.

Report for week ending Nov. 21.
Flying has been interrupted every day by rain and wind. At short intervals, when weather permitted, we managed to put in a total of 13 hrs. 35 mins.

The following members had dual instruction:—J. J. Hofer, M. P. Susman, H. S. Spooner, J. L. Gardiner, C. E. Murrell, T. C. Sharwood, E. J. B. King, L. Martino, E. E. Shaw, Miss O'Brien, H. Solomon.

The following flew solo:—W. Hay, Miss O'Brien, C. E. Murrell, W. Roche Kelly, O. J. Tapper, A. R. Ogston, G. H. Craig, S. O. Bradshaw.

The following had joy-rides:—L. C. Davey, R. A. T. Smith, B. Waugh, L. Guinness, J. J. Hofer.

The Lancashire Aero Club.

Report for week ending Nov. 20.
According to a leading Manchester paper the rainfall during the past week has equalled the average rainfall for the whole month, while the wind attained a velocity of 57 m.p.h. The paper in question is a Liberal one, but the figures strike one as Conservative.

Total flying for the week 10 hrs. 30 mins., made up as follows:—Dual with Mr. Brown: Twemlow 1 hr. 10 mins., Blagden 55 mins., Miss Emery 40 mins., Shiers 30 mins., McNair 30 mins., Fallon 25 mins., Dobson 20 mins., Dickinson 20 mins., Hardy 15 mins., Pitman 10 mins.

Solo: Messrs. Costa 1 hr. 30 mins., Pitman 55 mins., Goodfellow 35 mins., Hardy 15 mins., Cantrill 10 mins., Lacayo 10 mins.

Joy-rides with Mr. Brown: Cantrill and Leeming 20 mins. each. Tests: 1 hr.

Apropos of the weather, one has no sympathy with those members who are agitating for seaplanes. The area of aerodrome actually under water would not justify us in using seaplanes alone. What is really needed is a nice, quiet amphibian.

The Hampshire Aeroplane Club.

Report for week ending Nov. 18.
Total flying time 6 hrs. 27 mins. Instruction 3 hrs. 55 mins. Passenger flying 47 mins. Solos 1 hr. 45 mins.

Being one of the few remaining institutions in the country which had not paid homage to Sir Alan J. C., the opportunity to rectify this state of affairs was seized upon by the Hampshire Club on the occasion of that worthy's departure from Southampton in the *Homer* on Wednesday last.

Mr. Thomson with Mr. McCracken (who was associated with Sir Alan in some of his earlier flights) in the passenger's cockpit flew to the Southampton Docks and proceeded to make rings round the ship. Britain's own airman was easily distinguished on board as he had a nice clear space all round him for the benefit of the small army of press photographers who wished to seize the last opportunity of snapping their hero before he departed to vanquish new worlds.

McCracken bombed the vessel with a letter wrapped up in doped fabric, but only scored an outer.

The Moth then returned to the Club aerodrome and Mr. Thomson then exchanged McCracken for Mrs. Thomson and flew out to the ship which was by this time passing down Southampton Water. Sir Alan seemed delighted with this send-off, for he was seen waving both arms until the ship rounded the Isle of Wight. At least, that is what our Instructor said.

Two pupils were successfully launched during the week, Mr. R. H. Bound, the Hon. Publicity Secretary to the Club, going off on Tuesday morning and Mr. Nicholson following suit in the afternoon. Only a change in the weather prevented the hat trick being accomplished, as Mr. Keeping was passed out ready for solo on the same afternoon.

The following members received instruction:—Bound 1 hr., Cooper 40 mins., Southcliffe 40 mins., Keeping 25 mins., Nicholson 25 mins., Fry 20 mins., Stokes 15 mins., Dickson 10 mins.

The soloists were:—Simmonds 1 hr., Perfect 5 mins., Bound 5 mins., Nicholson 10 mins., and Lieut. Graham, R.N., 25 mins.

The Yorkshire Aeroplane Club.

Report for week ending Nov. 19.
Total flying time (for two days) amounted to 2 hrs. 35 mins., 1 hr. 25 mins. being solo, 1 hr. 5 mins. dual, and 5 mins. test.

Capt. Beaumont took dual instruction, while Messrs. L. S. Dawson, Watson and Wood flew solo.

The weather, the whole weather, and nothing but the weather is our only recommendation to mercy this week. It is thought that floats and a hood are the only things that will make flying possible until the spring.

The hopes of Messrs. L. S. Dawson, Ferreira, Lax, Mann, Watson and Wood of passing their final tests for their "A" Licences are again dashed to the ground this week.

G-EBNN is now fitted with a beautiful pair of balloons and nice new cylinder heads and still looks very pretty in the hangar.

The Sydney (N.S.W.) Club.

Week ending Oct. 2.—Total flying time 17 hrs. 35 mins., of which 9 hrs. 15 mins. was dual instruction. Total number of flights 46.

Week ending Oct. 9.—Total flying time 19 hrs. 40 mins., of which 4 hrs. 35 mins. was dual instruction. Total number of flights 78.

On Oct. 16 two more pupils went solo, each after only seven hours' dual instruction, this bringing the total of pupils who have done their first solo to eleven in eleven weeks.

On Oct. 12 the Club's "Flying Ball" was held at the Palais Royal, Sydney, and was a brilliant success. In spite of bad weather the attendance was just under 1,000 and the financial results should be most satisfactory. One of the Club Moths was the centre-piece of the scheme of decorations.

The Melbourne (Victoria) Club.

The Melbourne Flying Club, a branch of the Australian Aero Club, was officially opened at Essendon on Aug. 21 by the Lieut.-Governor of Victoria, Sir William Irvine. The programme opened with the arrival of three S.E.5as and a D.H.9 of the R.A.A.F. in formation. At 15.30 hours three Moths, flown by Sir (then Mr.) A. J. Cobham, Mr. Mustard, the Club's instructor, and Mr. Follett, of the Civil Aviation Branch of the Air Board, gave a demonstration of formation flying.

Then followed a demonstration of picking up messages with a D.H.9, a balloon chase by Messrs. Cobham and Mustard, an aerial

fight between a D.H.9 and two S.E.5as, a parachute jump from a D.H.9a by Flg. Off. Scherger with a Service Irvine parachute, a race by three Moths, won by Mr. Alan Cobham, and finally an aerobatic demonstration by three S.E.5as.

At 17.00 hours the first Club pupil took his first flying lesson and the day was brought to a close by a fly-past of all machines present. Altogether a very successful inauguration.

Other Australian Clubs.

The Light Aeroplane Club movement has not been confined to Sydney and Melbourne. Sections of the Australian Aero Club are being formed in Adelaide and Geelong.

In the case of the Geelong Club, the Air Board has arrived at an agreement whereby the new Club will take over one Moth with spares on loan and will receive a bonus of £20 for each pupil trained thereon. Geelong had up to the end of August secured over a hundred provisional members, had received over 20 applications for flying tuition and were building—by voluntary labour—a hangar 40 ft. by 50 ft. with material donated by public-spirited citizens.

Other centres of the Commonwealth have received Government approval for the formation of Flying Training Schools. These are Perth, Hay, Longreach and Brisbane.

In these four centres the scheme of training will follow mainly the lines adopted in Sydney and Melbourne but the extent of Government assistance will be somewhat different. Instead of loaning Moths and granting a bonus of £20 per trained member up to 50 per annum, the Government will entrust the training of pupils to the three subsidised air traffic companies at present operating regular services, viz.: Western Australian Airways Ltd., at Perth; The Larkin Aircraft Supply Co. Ltd., at Hay; and The Queensland and Northern Territory Aerial Services, at Longreach and Brisbane.

These companies will form flying schools and will provide the equipment, hangars, etc. The Government will grant an increased bonus for each pupil trained, up to 50 such per annum, by these schools.

THE REID CONTROL INDICATOR.

Vickers Ltd. have received the following report from the Chief of the Danish Army Air Service concerning the behaviour of the Reid Control Indicators used by Capt. Botved on his flight from Copenhagen via Calcutta, Rangoon and China to Yokohama and thence back to Copenhagen via Siberia, and by Lieut. Herschend on his flight from Copenhagen to Rangoon and back.

The two officers say about the control indicators:—

Regarding the Reid Control Indicators built in the Fokker C.V. we beg to report the following:—The Indicators have during the whole voyage worked irreproachably and immediately. The working of them is easy and simple. The full gain of the instrument is, however, only obtained after some practice, but when you have got used to the instrument it is of the greatest importance when flying through clouds and in fogs.

When the indicator is adjusted at full action it is very sensitive even for very small changes in the position of the aeroplane. In bad weather, it is, therefore, appropriate to mute the oscillations of the instrument for in the long run not to be tired.

ANGLO-ITALIAN RECORDS.

Signor Passaleva, flying a Savoia 55 twin-hulled monoplane flying-boat (two 500 h.p. Isotta-Fraschini Asso engines) and carrying a useful load of 2,000 kgs. over a total distance of 1,000 kms., has broken seven World's Records.

It is interesting to note that K.L.G. sparking plugs were used in the Isotta-Fraschini engines. In this connection the Italian agent of the Robinhood Engineering Works Ltd., the manufacturers of K.L.G. plugs, has received the following telegram:—

We beg to express you our great pleasure for the perfect working of K.L.G. plugs supplied by you for the purpose of carrying our record trials with our flying-boat S.55 on the Lago Maggiore.—(Signed) IDROSAVOIA.

In addition the pilot, Signor Passaleva, wired:—Your marvellous plugs allowed me to beat seven Records of the World without the least trouble in spite of the high speed of the engines.—(Signed) PASSALEVA.

ANGLO-GERMAN RECORDS.

Herr Von Gronau, flying the Heinkel H.E.5 monoplane seaplane (450 h.p. Napier Lion engine) on which he won the German Seaplane Competition at Warnemünde this Summer, has recently put up two new World's Records.

Carrying a useful load of 1,000 kgs. (2,204½ lbs.), he reached a height of 14,520 ft. and with half that load he reached 18,480 ft.

Both records are subject to confirmation by the F.A.I.

AN ACCIDENT AT STAG LANE.

On Nov. 22, Mr. Sydney St. Barbe, second instructor to the London Aeroplane Club, crashed when landing one of the Club Moths. His passenger, Mr. J. S. M. Michie, the Club's ground engineer, was killed and he himself suffered severe concussion.

Until after the inquest no reliable evidence is available. Mr. St. Barbe is a very skilful pilot and it is hardly likely that he made a mistake in landing.

The late Mr. Michie was very popular with everybody in the Club. He was an able engineer, and the high number of flying hours flown by the Club was largely due to his skill in maintaining the machines.

This is the first fatal accident, in fact the first serious accident of any kind, which has happened to a Moth, and it is curious that the victims should have been two men who have had so much experience of aviation in general and of the Moth in particular.

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D.H. 50.

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LONDON
CAPE TOWN
LONDON

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LONDON
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An Appreciation from Sir Alan.

"I am just writing to tell you how thankful we were that the wings of our De Havilland fifty had been doped with the Titanine Doping Scheme, because throughout the monsoon and all the deluge we encountered, combined with the terrific heat of Mesopotamia, our wings were taut the entire way from England to Australia and back again.

"It may interest you to know that they were the same fabric and the same doping scheme that we used on the Cape flight, and the wings were not re-doped for the Australia flight, which is another proof of the wonderful quality of 'TITANINE' Doping Scheme."

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 11; Tuesday, 10; Wednesday, 5; Thursday, 9; Friday, 12; Saturday, 0; Sunday, 3.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 21, passengers 84, freight 9 tons.

AIR UNION:

Paris—London: Machines 15, passengers 18, freight 4 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 6, passengers 20, freight 2 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 6, passengers 8.

PRIVATE:

Machines 2, passengers 3.

Total number of trips by British Machines, 23, carrying 87 passengers. Foreign Machines, 27, carrying 48 passengers.

Comparative Figures:

Week ending Nov. 14:

Machines, 50; Passengers, 133; Crews, 65; Total personnel, 198.

Corresponding week, 1925:

Machines, 43; Passengers, 111; Crews, 52; Total personnel, 163.

Corresponding week, 1924:

Machines, 61; Passengers, 134; Crews, 76; Total personnel, 210.

Corresponding week, 1923:

Machines, 31; Passengers, 57; Crews, 49; Total personnel, 106.

Corresponding week, 1922:

Machines, 65; Passengers, 151; Crews, 121; Total personnel, 272.

Corresponding week, 1921:

Machines, 44; Passengers, 87; Crews, 71; Total personnel, 158.

Corresponding week, 1920:

Machines, 47; Passengers, 85; Crews, 57; Total personnel, 142.

Croydon Notes.

Croydon has been somewhat "under the weather" during the past week. Parts of the aerodrome have been very much under the weather and the whole place has looked more like a seaplane base than a respectable land aerodrome. On several days the services were dislocated by the weather.

On Saturday the services were cancelled altogether. But when the wind and rain was at its worst Herr Noach on a Lufthansa Junkers came floating in from somewhere or another on the other side of the Channel. A remarkably fine feat. Evidently the pilot is a direct descendant of the late Mr. Noah and found the high part of Croydon a useful Ararat for his all-metal ark.

The De Havilland Hercules has not yet been delivered to Imperial Airways. The weather lately has been so bad that the De Havilland Company have not been able to carry out the remaining tests, which necessitate clear sky and no wind.

Last week the régime of Trust Houses Ltd. at the aerodrome came to an end. The hotel has now become an "Anchor Inn" under the direction of Barclay and Perkins Ltd. The Hotel has been a Trust House since the aerodrome came into being as the London Terminal in March, 1920.

To run such an hotel in the past has always been a thankless task, but taking it by and large, it has seemed that though Trust Houses Ltd. has always done its best it has never quite risen to the occasion. Already under the new régime there is an improvement in the meals and the prices, which looks as though Barclay and Perkins Ltd. mean to make the place a success.

Lt.-Col. Minchin, the Admiral of the Lowenstein Navy, took the owner to Brussels and back during the week on the Fokker F.VIIa. One gathers that the French Jupiter engine needs rather more care and maintenance than does the Bristol-built version. When one sees the accuracy with which the British engines are turned out under Mr. Roy Fedden's guidance at Bristol this is scarcely surprising.—G. D.

THE PRESENTATION OF THE TAYLOR MEDAL.

On Nov. 10 the Institution of Aeronautical Engineers held a dinner at Kettner's to present the Taylor Gold Medal to Capt. W. H. Sayers (Honours Member) for the best paper read during the session 1925/1926.

This Medal is presented each year by Capt. G. A. Taylor, F.R.A.S., F.R.G.S., M.I.Ae.E., a member of the Australasian Branch of the Institution, and is to be awarded at the discretion of the Council to the Member of the Institution who submits or reads the most valuable paper during the session. The first award has been made to Capt. Sayers for his paper on "The Modern Theory of Aerofoils and its Application to Aeroplane Design," read on June 8, 1926. The Paper has just been published in Minutes of Proceedings No. 20 of the Institution.

Mr. R. J. Parrott, of A. V. Roe and Co. Ltd., was in the Chair, and in making the presentation, said that the best thanks of the Institution were due to Capt. Taylor for his generosity in giving this gold medal, and that it would serve as a common bond between the activities of the Institution both at home and in Australia. He (Mr. Parrott) was very glad that the Council had awarded the medal

to Capt. Sayers, for none could deserve it more. He had known Capt. Sayers for very many years as one of the most able and keen members of the aeronautical profession, and in the post which he had held for some years as Technical Editor of THE AEROPLANE he had provided innumerable articles of the greatest assistance to all concerned with aviation.

As to the prize paper—"The Modern Theory of Aerofoils and its Application to Aeroplane Design"—the Chairman said that the subject was inexhaustible and Capt. Sayers' paper was a valuable addition to what had been written.

CAPT. SAVERS said that he was sensible of the great honour that had been conferred upon him by the Institution in presenting him with an exceedingly handsome medal, more particularly as it was the first time the medal had been awarded. He had meant to collect and tabulate the data in the paper for his own purpose for 2 or 3 years. Whenever he had felt like setting about it there was always something else to be done, and when he had had time to spare there was something better to do. Therefore when the Institution had asked him to read a paper on the subject he really had to do it. He hoped that when the members had read the paper, which was just now issued in complete form, they would feel that the award was justified.

DR. THURSTON, proposing "The Institution," recalled that it was "a Society for the encouragement, development and protection of the profession of Aeronautical Engineering." It was fairly young, having been born at the end of the war. Since then it had grown year by year. It had not yet reached the dimensions of the Mustard Club, but its influence was felt wherever aeronautical engineers foregathered.

The Australasian Branch was in a very flourishing condition, and they could have no better proof of this than the Taylor Medal.

He referred to the early pioneers, among whom was Mr. A. V. Roe, who to-day was head of the great and honoured company which Mr. Parrott represented this evening, whose machines had been built in greater numbers, and been the means of instructing more pilots than any other.

He paid a warm tribute to Mr. Norman J. Hulbert for the wonderful way in which he was performing the duties of Acting Honorary Secretary. He had stepped into the breach when necessity arose, and had thrown himself into the work with an enthusiasm which had never been equalled. He had done a tremendous amount of propaganda work, and the Institution was fortunate in having someone who was devoting his time to looking after the interests of aeronautical engineers. Mr. Hulbert was a keen pilot, with the spirit that lifts one upwards, and that was the spirit in which he was devoting himself to the interests of the Institution and its members.

MR. HULBERT said that it was much more nerve-racking to have to reply to the eulogies of Dr. Thurston than to go with a man on his first solo flight. The time that he gave to the work of the Institution was not so much as Dr. Thurston had said, for the permanent staff was very efficient. The Assistant Secretary, Miss Jarvis, had a thorough grasp of all departments, and was capable of dealing with them without supervision. Referring to the work of the Institution, Mr. Hulbert said that it would welcome many more members. He did not advocate indiscriminate canvassing, but he hoped that all those present would lose no opportunity of bringing home to their friends the advantages of joining the Institution.

CAPT. LAMPLUGH, proposing the Chairman, said that Mr. Parrott was one of the ruling spirits of probably the most famous aircraft works of all. Referring to Capt. Sayers, the speaker said that he had probably done more than any other individual member of the Institution to bring it into prominence, and he felt therefore that the Council had done a very good work indeed in giving him this medal.

THE WESTLAND AIRCRAFT SOCIETY.

The Westland Aircraft Society, whose formation was announced in this paper on Nov. 10, has already given abundant evidence of vitality. The first of the series of weekly lectures for prospective ground engineers, delivered on Oct. 27, was mentioned in the previous notice. This was followed by three others of the series:—

"Faults on Flight Test, Diagnosis and Correction," by Mr. W. G. Gibson (Nov. 4); "The A.I.D.," by Mr. H. H. W. Vowden (Nov. 10); and "Dopes, Lacquers, etc.," by Mr. Fletcher, of Titanite Ltd. (Nov. 17).

This last lecture was attended by an audience of over seventy, and gave much useful and interesting information concerning the ingredients of dopes and lacquers and the precautions necessary in their manufacture and use.

Further lectures of this series have been arranged as follows:—Nov. 25, "Aircraft Timber," by Mr. T. Carey. Dec. 1, "Seaplane and Flying-boat Construction," by Mr. V. S. Gaunt. Dec. 8, "Component Checking and Inspection," by Mr. R. C. Taylor. Dec. 15, "Defects and Deterioration," by Mr. W. G. Gibson. Dec. 22, "Testing of Materials," by Mr. Sutcliffe.

In the series of lectures of more general interest, that given by Capt. Hill on the "Pterodactyl," was followed on Nov. 19 by a paper on "Cold Worked Steels used in Aircraft," given by Mr. Adams, of Bruntons Ltd.

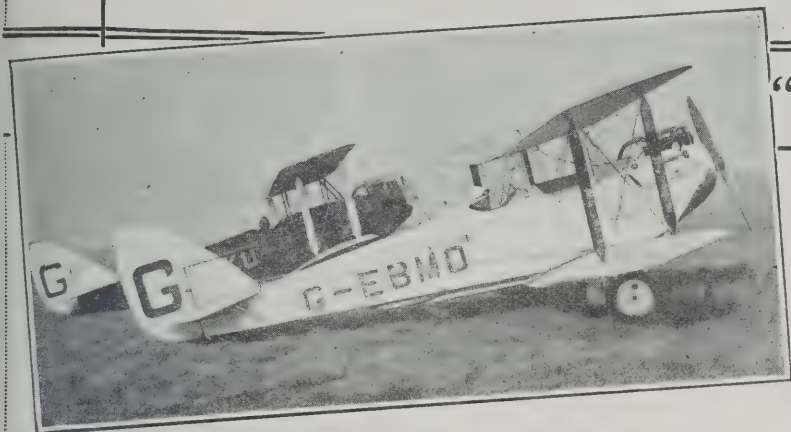
A third lecture of the series will be given on Dec. 3, when Sq. Ldr. Gregory from Farnborough will speak on "Some Experiences in Iraq with Special Reference to Wireless."

Considering the youth of the Society, the programme already arranged and the success with which it has so far been carried out, is fairly strong evidence of the keenness and *esprit de corps* which is to be found among the staff of the Westland Aircraft Works.

On Friday evening, 19th inst., a meeting of the Westland Aircraft

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"In Search of the Sun."

MR. T. Neville Stack and Mr. Bernard S. Leete, of the Lancashire Aero Club, started for the East, on their D.H. Moth light aeroplanes, on November 15th.

If conditions are favourable, they will endeavour to set up a long distance record for light aeroplanes.

To ensure the absolute reliability and maintenance of power output essential on duration flights, they are following the precedent now so firmly established by using throughout their journey—

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Society was held at the Three Choughs Hotel, Yeovil, when a lecture was given by Mr. A. Adam (of Bruntons) on "Cold Worked Steels Used in Aircraft." Mr. Bruce was in the Chair and there was an attendance of over 80.

The Lecturer dealt with the methods of manufacture and testing, and illustrated his remarks by lantern slides. The micro-photographs—showing the granular structure of the steel after the different processes—were particularly good.

SATISFACTIONS.

GRAHAME-WHITE CO. LTD.—Satisfaction in full (a) on Jan. 1, 1926, of debenture dated Feb. 23, 1917, securing £30,000; (b) on Mar. 31, 1926, of mortgage dated Dec. 19, 1917, securing £100,000; (c) on Mar. 31, 1926, of mortgage dated Nov. 12, 1915, securing £25,000, and further advances; (d) on Mar. 31, 1926, of charge dated Dec. 23, 1920, securing £6,375; (e) on Jan. 1, 1926, of debenture dated Oct. 12, 1917, securing £20,000; and (f) on Mar. 31, 1926, of charge dated Mar. 2, 1918, securing all sums not exceeding £320,000. (Notices filed Sept. 21, 1926.)

HANDLEY PAGE LTD.—Satisfaction to the extent of £65,000 on Sept. 2, 1926, of charge dated July 21, 1926, securing £120,000.

MORTGAGES AND CHARGES.

AERIAL PHOTO CO. (PETERBOROUGH) LTD.—Debenture charged on the Company's undertaking and property, present and future, including uncalled capital, dated Sept. 20, 1926, to secure all moneys due or to become due from the Company to Barclays Bank Ltd.

LONDON AERO CLUB LTD.—Mortgage debenture dated Oct. 11, 1926, to secure such sum as may be due not exceeding £2,000, charged on certain machines and material which may have been or may be purchased by the Co. out of funds supplied by the Air Council. Holder: President of the Air Council.

THE MIDLAND AERO CLUB LTD.—Debenture dated Sept. 21, issued pursuant to agreement dated June 17, 1926, securing a sum not exceeding £2,000, charged on such of the property, present and future of the Company as may have been or may be purchased in whole or in part either with money supplied by the President of the Air Council under provisions of agreement bearing the last mentioned date or with moneys received from any insurance (other than third party or Employer's Liability Insurance) effected by the Company under the agreement. Holder: President of the Air Council.

NEWCASTLE-UPON-TYNE AERO CLUB, LTD.—Agreement to issue a debenture, dated June 14, 1926, to secure a sum not exceeding £2,000 charged on such of the company's property, present and future, as may have been or may be purchased in whole or in part either with money supplied by the President of the Air Council or with money received by virtue of any insurance (other than third party or employers' liability assurance) effected by the company, by virtue of any such insurance until the same shall have been laid out by the company in making good the loss or damage in respect of which it is received by the company. Holder: President of the Air Council.

HAMPSHIRE AEROPLANE CLUB LTD.—First debenture dated Sept. 9, 1926, to secure £2,000, charged on such of the Co.'s property, present and future, as may have been or may be purchased in whole or in part either with money supplied by the President of the Air Council under the provisions of an agreement bearing the above date, or with money received by virtue of any insurance effected by the Co. under such agreement. Holder: President of the Air Council.

RECEIVERSHIP.

AIR NAVIGATION AND ENGINEERING CO. LTD.—Sir Basil E. Mayhew, K.B.E., of Alderman's House, Bishopsgate, E.C.2, C.A., was appointed Receiver and Manager on Nov. 10, under powers contained in debenture dated Jan. 7, 1926.

PERSONAL NOTICES.

DEATHS.

COLLISON.—On Nov. 22, at Kenley, Surrey, as the result of a flying accident, Frederic Laing Collison, Lt., 4th Batt. Essex Regt., and Flg. Off., R.A.F.

Mr. Collison was detached from the Essex Regt. (T.F.) for duty with the R.A.F. in September, 1926. He served with the R.F.C. during the War, 1914-18.

MOON.—On Nov. 15, at a nursing home, Ernest Cecil, late Flg. Off., R.A.F., of 32, Durbar Avenue, Foleshill, Coventry.

WOOLLARD.—On Nov. 22, at Kenley, Surrey, as the result of a flying accident, Flt. Lt. Felix St. John Woollard, A.F.C., No. 24 (Communication) Sqdn., R.A.F.

Flt. Lt. Woollard transferred to R.F.C. from the East Kent Regt. during the War, 1914-18. On the occasion of His Majesty's Birthday, 1919, he was awarded the Air Force Cross in recognition of distinguished services rendered during the war. In January, 1921, Flt. Lt. Woollard was appointed to No. 5 F.T.S., Chester, and the following year to No. 4 F.T.S., Egypt. In August, 1922, he was appointed to No. 216 Sqdn., Heliopolis. In May 1923, he was transferred to H.Q., Palestine, and appointed Camp Commandant at Bir Salem. In 1925 he was restored to the Home Establishment and appointed to No. 24 Sqdn. in May, 1926.

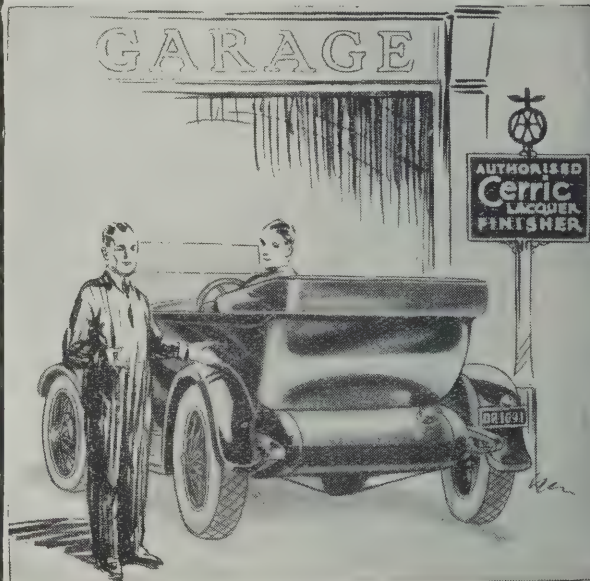
FORTHCOMING MARRIAGES.

HASLAM-CUTHBERT.—The marriage arranged between James Alexander Gordon Haslam, M.C., D.F.C., Flt. Lt., R.A.F., son of the late Mr. and Mrs. John Bailey Haslam, and Helen Kinnear, eldest daughter of the late Mr. W. M. Cuthbert, of Cape Town, South Africa, and of Lady Seymour-Lloyd, and step-daughter of Sir John Seymour-Lloyd, K.C., of Headley Grove, Headley, Surrey, will take place at St. Mary's Church, Headley, on Dec. 15.

MEREDITH-HADDY.—The engagement is announced between Mr. A. C. Meredith, Flg. Off., R.A.F., son of Mrs. C. Meredith and the late Mr. J. Meredith, of Nottingham, and Marjorie, the eldest daughter of Eng.-Capt. F. G. Haddy, M.V.O., Royal Navy, of H.M.S. *Fisgard*, and Mrs. Haddy, of Southsea.

WALMSLEY-PIM.—The engagement is announced between Flt. Lt. Hugh Walmsley, M.C., D.F.C., third son of Mr. and Mrs. James Walmsley, Bexhill, and Audrey, third daughter of the late Dr. J. H. Pim and of Mrs. Pim, Sleaford, Lincolnshire.

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THE AEROPLANE—DEC. 1, 1926.

FLYING ACCIDENTS.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by C. G. Grey

Vol. XXXI. No. 22.

SIXPENCE WEEKLY.


[Registered as a Newspaper]

"SCIENTIA LABORE ASTRIS TUTUS PER CAELUM IBIS."

(The Motto of the R.A.F. Base, Calshot.)



THE COASTAL CRUISE:—The R.A.F. Flight of Supermarine Flying Boats (two Napier Lion engines) from the R.A.F. Base, Calshot, under the command of Sq. Ldr. A. Durston, D.F.C., R.A.F., at anchor off the East Coast in the course of the cruise which started at Cromer on Sept. 6 and finished at Calshot on Sept. 15.



ALL WEATHER FLYING

In low visibility the Marconi Direction Finder—installed on aircraft or at Ground Station—is a valuable aid in navigation and makes for safety of flight.

Sir Samuel Hoare, the Air Minister, in an address at the Royal Aero Club, wireless was now of tremendous help to pilots working in weather which a few years ago would have been regarded as impossible for flying.

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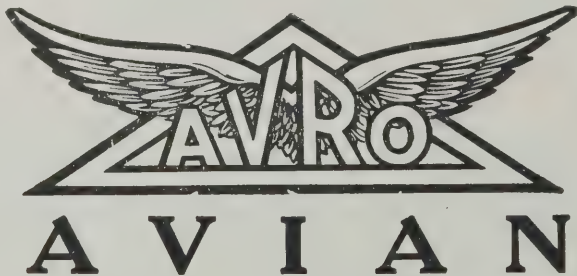
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THE AVRO "AVIAN" two-seater light aeroplane was the only newly designed machine at Lympne, and it has been universally acknowledged that it was the most interesting aeroplane present. "The Aeroplane" said:

"THE 'AVIAN' is really remarkable. Only a few years ago our most noted scientists proved to their own satisfaction that it was quite impossible for any aeroplane to carry its own weight as useful load. Yet here we have a machine which instead of going 50-50, performs with roughly 45 per cent. construction weight and 55 per cent. useful load, and it is the fastest machine in the Competition."

THIS extraordinary weight-carrying capacity of the competition machine not only serves to indicate once more the superiority of Avro design, but makes it possible to secure by modification all the essential qualities of the privately owned aeroplane, and, moreover, those refinements which help so much towards the comfort of aerial travel, without fear of overloading.

THE AVRO "AVIAN" will shortly be available fitted with the "Cirrus" Mark II engine. Advance particulars will gladly be sent on request.



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DEC. 1,
1926.

THE AEROPLANE

VOL. XXXI.

No. 22.

Incorporating
Aeronautical Engineering

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ON FLYING ACCIDENTS.

Once again the subject of flying accidents is occupying the attention of the non-aeronautical public. Questions in the House of Commons on Nov. 22 brought into prominence the number of accidents in the Royal Air Force, and blazing posters about a "Baby Plane Crash" told everybody about the lamentable mishap to one of the London Aeroplane Club Moths at Stag Lane on that same day.

Of course it is very irritating to all of us who want to make the British public air-minded and want to persuade everybody to fly as a matter of course, even though some of us do not do much flying ourselves, that so much attention should be drawn to every fatal accident which happens. But we can do no good by abusing the daily Press and Members of Parliament for making much of our misfortunes. The daily papers have to make a living, just like the rest of us. And those who direct such papers have found from long experience that the destruction of human life sells their products better than any amount of enthusiasm about better human living.

We may find a certain amount of consolation in the fact that thanks to a fairly good imitation of a London pea-soup fog on Nov. 24 and 25, which stopped all flying, the contemporary posters spread themselves largely over a railway accident in which seventy people were injured, a very comprehensive motor-bus crash, the death of a Bolshevik emissary, and quite a good *crime passionelle*. That at any rate showed that the newspapers have no prejudice against Aviation as such, and are merely interested in death for death's sake, so to speak.

FLEET STREET'S PROGRESS.

At first, when flying and oneself were very young (to newspapers) and the papers made so much of fatal flying accidents,

one was inclined to think that when flying became common, even as common as it is to-day, a fatal aeroplane crash would lose its attraction for the ghouls of Fleet Street. But now, seeing that train and bus and motor fatalities, as for example the recent "Blazing Car" affair, are still considered fit to top the bill, one has given up the idea that fatal aeroplane accidents will cease to attract.

We have at any rate reached the point where, in order to be worthy of a poster, an aeroplane accident has to have some unusual feature about it. Several ordinary R.A.F. accidents have happened within the last few months which were not featured on posters. They were only considered worthy of a single-column heading in the evening papers and of quite a short paragraph in the morning papers.

That is quite a healthy sign. It means that an aeroplane crash has to have what Fleet Street calls a "heart interest" or a "story" attached to it, or there has to be something unusual which makes it a stunt, before it appeals to the shock troops of the Press as being sufficiently shocking to interest the public.

Very soon it will be possible to be killed in an aeroplane accident without one's name getting into the papers at all, or only to the same extent as those of people who fall off tube platforms in front of trains or side-slip in front of motor-buses or butt into the radiators of motor-cars. And when that time comes we may safely regard Aviation as a recognised method of transport.

WHAT IS THE EFFECT?

Personally one doubts whether all these posters in these days do seriously deter anybody from flying. The young man and woman of to-day, at any rate under twenty-five years of age, cannot properly remember a time when there were no



GETTING AWAY WITH IT.—A Vought UO-1 single-float seaplane (200 h.p. Wright Whirlwind engine) being launched by means of a gunpowder catapult at the U.S. Navy Yard, Philadelphia. A cinematograph film of a similar machine being launched from the deck of the U.S. battleship, "West Virginia," was issued by the Pathé Super-Gazette on Nov. 18, and showed by the slow-motion process that these craft are launched without any jar or shock from the explosion, and that they hardly drop at all on leaving the end of the catapult.

aeroplanes. At most they can only remember when flying was a new and exciting thing. What they do remember most distinctly is the enormous amount of flying that was done all over the country during 1914-18, when they were receiving their most vivid impressions of life.

One has yet to meet a person of that age who is any more afraid of flying than he or she is afraid of being driven in a very fast car. There are people of all ages who are naturally timid, and afraid of anything in the way of violent locomotion. But even they are no more afraid of an aeroplane than they are of a fast car or a fast horse. And most of such timid persons are much less afraid of flying than they are of hunting.

Therefore on the whole we may reasonably assume that all this advertising of flying accidents has very little effect on the popularity of flying. At any rate we need not bother our heads about trying to induce the newspapers to suppress gruesome posters or grisly accounts of air crashes, nor need we trouble about Members of Parliament who try to show up the Air Ministry by extracting statistics of R.A.F. fatalities in the House. A far better policy is to do a little more than we are doing towards preventing the accidents.

Although we can afford to a very great extent to ignore the effects of advertising fatal flying accidents, nobody is going to argue that they are anything in the way of a good advertisement for flying. And undoubtedly we should get along faster towards making the public air-minded if we could abolish fatal accidents altogether, and so remove the possibility of such evil advertisement.

STATISTICS.

There are those who think that the effect of all the publicity given to such accidents might be diminished, if not abolished altogether, if the Air Ministry would consent to publish statistics about R.A.F. fatalities. One knows that the Air Ministry is always being pressed for such statistics, but one does not believe that they would do an atom of good to the general public, though they would be quite interesting to those of us who are already in aviation.

Anything can be proved, one way or the other, from statistics, much as the Devil can always quote the Scriptures for his own purposes. Take for example such figures as Sir Samuel Hoare gave in the House of Commons on Nov. 22.

Dealing with the period Jan. 1 to Nov. 18 of this year, 1926, he said that there had been 49 fatal accidents as compared with 36 during the corresponding period in 1925. The number of deaths in the two periods were 78 and 50 respectively. And the number of aircraft "written off charge" as the result of crashes, fatal and otherwise, were 230 for the 1926 period and 212 for the 1925 period. Now from those figures one can argue either that the piloting is very much worse in 1926, because there have been more crashes, or that it is very much better, because although there have been more

crashes the mileage flown has increased in a far greater proportion to the number of crashes.

Either way that proves nothing, for Sir Samuel Hoare pointed out that, among the 78 deaths in 1926, fifteen of them had occurred in three accidents, two of which might be regarded as of an exceptional character. From that one can argue that if these particular three accidents had not happened there would only have been 63 deaths in 1926 as against 50 in 1925 although there would have been 46 fatal accidents in 1926 as against 36 in 1925, which would lower the average rate of death per crash.

CHANCE AND CERTAINTY.

Undoubtedly, if the Air Ministry saw fit to publish the figures for the total mileage flown in the two periods we should find a much lower number of deaths per million miles flown in 1926 than in 1925. But if those figures were published we might find ourselves badly let down in the following year.

It is all very fine to prove from figures, such as an insurance actuary might perhaps calculate, that any one individual may safely expect to fly, say, half a million miles without being killed. But it is never safe to bet on actuarial figures. One cannot depend on the law of averages working evenly.

It may be quite true that one's chance of being killed is one in half a million miles. But there is always the possibility that there may be two deaths in the first ten miles and none at all for the remaining 999,990.

There is very little consolation even in calculating from figures that if a pilot is not killed, or does not kill anybody else, in his first hundred hours' flying, he is pretty safe to go on flying for another 1,000 or 10,000 hours. The uncertainty of chance is too apt to upset the law of averages.

A most appallingly ham-fisted pupil may do his best to kill himself and his instructors for ten or twelve hours of dual control work and fail. He may then become a real star turn pilot all of a sudden, as one has seen happen. He may fly for 1,000 hours or more absolutely faultlessly. And he may then kill himself simply by turning his machine over on the ground when taxiing, as happened to a very good R.A.F. pilot recently.

Certainly beginners, when they have passed the first stage of pupillage, are more likely to kill themselves than are experienced pilots. But even the most experienced pilots do manage to get killed in the most foolishly simple accidents. And it is equally true that motorists and hunting men of vast experience get themselves killed in equally silly accidents.

All that is to be had out of such figures is the quite obvious deduction that after a pilot has reached the stage of flying alone he ought to fly particularly carefully till flying is as natural to him as walking or running. And even then, the man who flies so carefully that he never gets himself into a tight place, is much more likely to die of old age than is



MECHANICAL WARFARE.—A Fighter Squadron of the R.A.F. co-operating with mobile artillery at Camberley on Nov. 13 on the occasion of the visit of the Dominions Prime Ministers. The aeroplanes are Gloster Grebes and the guns are 18-pounders on special mountings in tank chassis. They are known officially as Self-propelled Guns, or Birch Guns or S.P.G.s for short.

THE Napier Lion aero engine is the standard by which all engines are judged.

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For the three long-distance Service flights carried out by the Royal Air Force—from Cairo to Cape Town and back to England : from Plymouth to Alexandria and back : from Cairo to Aden and back—Napier engines were selected. A total engine mileage of 101,000 was flown without any mechanical trouble.

The only crossing of the South Atlantic by a single machine was made by Commandante Franco, when he flew from Spain to Buenos Aires, covering 6,259 miles in 59½ hours.

The First Prize in a competition held in Germany to discover the best German commercial seaplane was won by the only Napier-engined machine entered.

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the man who is such an amazingly skilful pilot that he believes that he is able to get himself out of any tight place in which he may find himself. Skill and resourcefulness are very useful qualities, but they do not prolong life so much as do caution and foresight.

REASONS WHY.

Something useful might be learned if we could be told more about how accidents happen. The Air Ministry already tells us the types of machines in which accidents have occurred. But that alone is not enough. Much more good would undoubtedly be done by publishing the findings of the Accidents Sub-Committee about each accident.

One has made this suggestion on various occasions. There are undoubtedly certain objections to it. One of the chief objections is that though the members of the Sub-Committee may be perfectly certain in their own minds that an accident happened for some specific reason, they may have no legal proof of the cause. Consequently if the cause as they see it were published they might either lay themselves open to an action for libel or they might actually be casting aspersions on an entirely innocent person or firm. Nevertheless, the fact that exactly similar objections apply to publishing the findings of the investigators into the causes of railway accidents does not prevent the Board of Trade from publishing those findings and taking action on them.

There is another objection to the publishing of the findings of the Air Ministry's Accidents Investigation Sub-Committee. That is the fact that the members of that Sub-Committee are paid officials of the Air Ministry. If their findings were published the unfortunate position would arise in a good many cases of one department in the Air Ministry blaming other departments or individual officials.

For example, nearly all the accidents on Bristol Fighters and D.H.9as, which between them account for a little more than half the total number, are such that if the Sub-Committee published a conscientious opinion about them practically everybody in the Air Ministry would be blamed—the Air Staff for forcing its pilots to use under modern conditions machines which were never intended for such work, the Supply Department for ordering the reconditioning and rebuilding of such machines according to their original designs, and the Technical Department for not condemning the original designs as obsolete, and for not taking obvious steps, such as the fitting of proper rudders and proper stall-indicators, to make safe such machines of those types as are still in use. But of this more will be said hereafter.

A FAULT IN THE SYSTEM.

Obviously a Sub-Committee of comparatively subordinate officials cannot be expected to issue to the public a verdict which would so sweepingly condemn the whole hierarchy of the Royal Air Force. And yet only by such publication can the improvements be brought about which are necessary to decrease the number of accidents in the Air Force.

One is all against letting any Government Department other than the Ministry have any finger in the pie of Aviation. If it were not so, one would plead that all accidents, R.A.F. and civilian, should be investigated and the findings published by the Board of Trade.

In fact one would advocate that the existing Accidents Investigations Sub-Committee, which is composed of able and experienced officials, should be transferred bodily to the Board of Trade so that they would not be in any sense under the thumb of Air Ministry officials.

But to do so would be the thin end of the wedge which would end in the Board of Trade having complete control of Civil Aviation. And that would remove what in a few years' time will be half the reason for the Air Ministry.

If Civil Aviation were placed under the Board of Trade there would be no sound argument against Army Aviation being put back under the War Office and Naval Aviation being put back under the Admiralty, with disastrous results. Actually there is no more reason why the Air Ministry should control Civil Aviation than that the Army should control road and rail transport or that the Navy should control the steamship lines—as in fact both of them do to quite a considerable extent. Which only shows that there are always two good sides to every argument.

The only way one can see out of the difficulty is for the Cabinet itself to appoint a special committee to investigate each air accident as it occurs, part of the duty of which committee would be to publish the results of their findings. That committee should be directly under the Cabinet, just as the historical departments of the three Fighting Services are, presumably with precisely this same idea of removing them from under the thumb of their own departments.

The real point is that if the reason for each accident were published something might be done to prevent such an accident from happening again. As it is nobody knows, except a privileged few, whether an accident is caused by so-called bad piloting or by bad design (for obsolete design, though first-class in 1916, would be bad design in 1926). And piloting

which might be considered bad, as causing a fatal accident in a machine of obsolete design, might not cause an accident of any kind in a machine of modern design, or even in a machine of ancient design but with modern modifications.

A MATTER OF FIGURES.

As already stated the majority of fatal accidents happen on Bristol Fighters and D.H.9as. But that is natural because there are so many more of each type still in use than there are of any one modern type. And so much more flying is done on those types, apart from their numbers.

It is certainly a disgrace to the Air Ministry that the bulk of the R.A.F. flying should be done on machines which were designed in 1916 and sent on active service in quantities in 1917. But as hardly any squadrons in the R.A.F. have been equipped with types to replace those two machines we have no way of discovering whether the replacing machines are actually any safer to fly than are those old war veterans.

To get at anything like an accurate estimate we should have to find out how many pilots have flown how many miles on Bristol Fighters and D.H.9as respectively and how many deaths had occurred on those machines in comparison with the number of pilots and the number of miles and the number of deaths on, say, Fairey Fawns.

One remarkable fact is that there have been hardly any deaths on Avros. That is due to the fact primarily that the Avro is a school machine used largely for dual control work, and that when pupils have reached the stage of flying alone on Avros they are still thoroughly scared of their machines. They still treat flying with proper respect and only begin to take liberties or to become careless when they are sent to join a squadron and get into whatever machine is the standard equipment of that squadron.

Also there is the fact that the Avro is comparatively slow and is extraordinarily controllable. In any case it is never loaded down to its limit of lifting capacity as are the unfortunate Bristols of the Army Co-operation Squadrons and the general purpose D.H.9as which are supposed to be bombers but are really used as pantechonics.

Though, as one has said, anything can be proved from statistics, one has had some figures extracted which are of interest and may permit of certain deductions being made.

MACHINES, UNITS AND RANKS.

In all, up to the date of compilation, there have been 51 fatal accidents since Jan. 1 of this year.

These are distributed among machines as follows:—Bristols, 15. D.H.9as, 11. Grebes, 4. Snipe, 3. Flycatchers, 3. Vimys, 2. Avros, 2. Bison, 2. Fawns, 2. Fairey III Ds., 2. Vernon, 1. Virginia, 1. Siskin, 1. Dart, 1. Gamecock, 1.

Taking the accidents by R.A.F. units they work out thus:—Service Squadrons, 31. Flying Training Schools, 6. Fleet Co-operation Units (Fleet Air Arm), 5. Depôts, 3. Bases (Seaplane), 2. Cadet College, 2. Aden Flight, 1. Experimental, 1.—The only points which arise for this are that the Fleet Air Arm seems to have an undue number of accidents in proportion to its size, and that, considering the enormous amount of flying done by the Training Schools, they have remarkably few accidents. Which proves definitely that our system of training is very good.

Taking the accidents by the ranks of the pilots, we find them thus:—Wing Commander 1 out of 118 officers of that rank in the Air Force General List. Squadron Leaders 2 out of 236. Flight Lieutenants 3 out of 664. Flying Officers 30 out of 1,100. Pilot Officers, and Pilot Officers under instruction 7 out of 419. Cadets 2 out of 200. Airmen 6 out of 146.

Naturally Wing Commanders and Squadron Leaders do less flying than do Flying Officers and Pilot Officers, so one would expect their percentage of crashes to be low. But Flight Lieutenants do a great deal of flying, and their percentage, being so low, seems to show that skill and judgment, and safety, come with experience.

Flying Officers certainly do the most flying of all, and many of them are young and reckless, so it is not surprising that their rate of crashing is higher than that of Pilot Officers and Cadets, who are still young enough at the game to treat their machines with respect. And the fact that airmen-pilots should have the highest crash-rate of all, despite the fact that their small total number (146 in all) is made up of carefully picked men, seems to justify our depending on officer-pilots. [One would add that 146 is the number with Service Squadrons and does not include airmen-pilots under instruction.]

In these 51 accidents all the pilots were killed, with the exception of three.

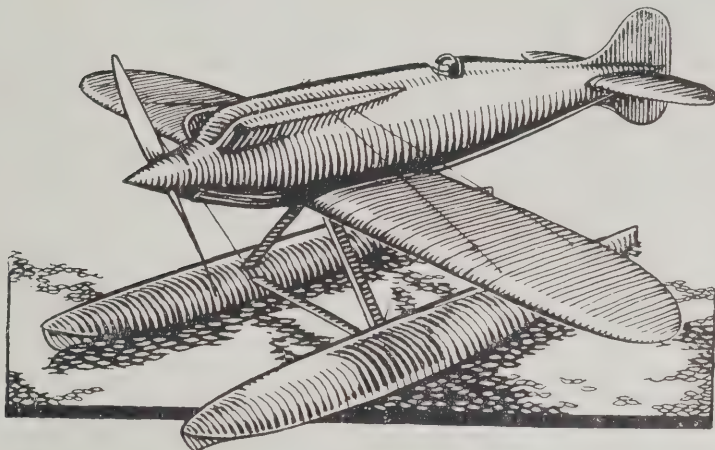
As to the countries in which the accidents happened, we find them thus:—Great Britain, 27. India, 9. Egypt, 6. Iraq, 4. Malta, 3. Transjordan, 1. Arabia, 1.—Which is a fair proportion for the number of units. Of those debited to Great Britain, 4 were Fleet Air Arm accidents.

THEN AND NOW.

Personally one believes that the chief reason for the excessive number of accidents on Bristols and D.H.9as is that in these days the machines are loaded down with gadgets and



THE SCHNEIDER TROPHY, 1926



The Reed airscrew has again been used by the winner of the International Schneider Trophy.

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wireless equipment and baggage and spare parts and all sorts of things which they were never designed to carry and were never asked to carry during the War 1914-18, and would never attempt to carry if they were used in real warfare to-day against a force equipped with modern aircraft. One would like to know the difference between their war-loads in 1918 and their peace-loads to-day.

So far as one can gather nearly all the accidents to these machines happen through stalling in getting off or landing. And the aerodynamic cause is almost always a spin when too near the ground. Either machine can always be got out of a spin if it starts when high enough in the air. Bristol Fighters never behaved like that in the old days, simply because they were flown with very much less load and were therefore very much more controllable.

ONE REMEDY.

One is told by those who have studied the trouble that even with its modern load a Bristol can be stopped from spinning merely by fitting a bigger rudder and so giving the pilot more control over it so that he can stop the spin as soon as he feels it beginning, without having to wait until the machine dives and gathers speed.

The Air Ministry's experts at the Royal Aircraft Establishment at Farnborough have been playing about with enlarged rudders on Bristols for several years and have, one believes, now enlarged their rudders to such an extent that they want to strengthen up the fuselages to make them stand the strain of the enormous rudders. And, as a result, R.A.F. pilots go on killing themselves and their passengers while the experts are making up their minds what to do about it.

In the meantime the Bristol people themselves merely fit adequately enlarged rudders to those machines which they supply to other countries or use themselves for their school work, and produce all the controlling effect that is required. So one may say quite safely that a considerable number of the people who have been killed on Bristol Fighters have been killed solely through the stupidity or obstinacy of the pseudo-scientists at Farnborough. Which merely shows that there has been as little change in the mentality of our Air Experts since 1916 as there has been in our machines.

UNPREVENTABLE ACCIDENTS.

There have been certainly a few instances of machines of various makes breaking in the air, or at any rate of something breaking in a machine which has put it out of control. The recent Court Martial at Sealand disclosed an accident of this sort to a Snipe, a machine which was very good in its day, but is now so old that, even when re-conditioned, it has to be treated with care in the air.

Also certain experimental machines may have broken and killed their pilots. Test pilots are always liable to that danger and their only safeguard against it is to carry out all their experiments at such a height that they can get away in a parachute if anything breaks. And even then fatal accidents will happen through parachutes getting tied up with the wreckage of the machine.

A NEW FACTOR IN AVIATION.

On Nov. 22 Alan Cobham Aviation Ltd. was registered as a "private" company with a nominal capital of £1,000.

The objects are "to carry on the business of manufacturers of and dealers in aeroplanes, airships, aerobuses, and all other machines or devices for aerial navigation, or for the carrying in the air of passengers or goods, proprietors of aviation, teaching and training schools and aerodromes, etc."

The first directors, to number not less than two nor more than five, are:—Sir Alan John Cobham, K.B.E., A.F.C., 22, Frogmal Lane, Hampstead, aviator (permanent). Emil Adam Merkel, Gallops Homestead, Ditchling, Sussex, director of Warwick Wright, Ltd. Lt.-Col. Warwick Wright, D.S.O., 28, Gilbert Street, Grosvenor Square, W.1, engineer.

The firm's solicitors are Kenneth Brown, Baker, Baker, Lennox House, Norfolk Street, Strand, W.C.2.

The registration of this Company is naturally of interest, and may be of great importance in the future.

Colonel Warwick Wright was one of the pioneers of motor racing in its earliest days and did some excellent driving in classic races on the Continent. In the famous *Circuit des Ardennes* in 1907 the Minerva Team, consisting of Mr. J. T. C. Moore-Brabazon (now Lt.-Col., M.P.), Mr. Kenelm Lee Guinness (now K.L.G.), and Mr. Warwick Wright, were first, second and third.

Prior to that Mr. Warwick Wright had broken speed records on the great racing Darracq, famous in the earliest days of Brooklands, and had put up fine performances in various French Grand Prix Races. In 1908 he popularised the Belgian Metallurgique in this country till it occupied pretty well the position now held by the Bentley as the sportsman's car.

In the earliest days of aviation he partnered his brother Mr. Howard Wright, who is still one of the prominent supporters of air racing, and when with him he flew the earliest Howard Wright monoplane on which Mr. T. O. M. Sopwith

Also there have been collisions, as in the case of the pilot on an Avro who flew into a Vimy which was being used for parachute experiments, with the result that he and the five occupants of the Vimy were killed. But against that we have had instances of collisions in which the men have got away safely in parachutes, as in the case of the two Fairey Foxes which collided at Andover.

ANOTHER REMEDY.

Probably if we could get at the causes of all the accidents we should find that actually the majority of them are caused by stalling too near the ground, either in getting off or in alighting, or merely in stunting too low down and stalling on a turn. Practically all these stalling accidents could be avoided even on our present antiquated machines by fitting the Bramson-Savage Anti-Stall Gear as standard equipment.

On machines of the most modern type it would still be an advantage, for, though it is easy enough to make a machine which will not nose-dive if stalled when flying in a straight line, but will merely sink vertically on an even keel and will remain under full control when so stalled, one does not imagine that any aeroplane could be built which would not drop its nose sideways and dive for some considerable distance if stalled on a steeply-banked turn.

Such circumstances are precisely those in which the Bramson gear is most likely to prove its value even to the most skilful pilot. A pilot doing a stunt turn near the ground, or to avoid a collision, cannot keep his eyes on his instrument-board. And it is just when his attention is so occupied by something outside the machine that he is most likely to stall. And it is just then that the Bramson gear gives the kick to the control stick which cannot pass unnoticed, no matter how busy the pilot may be.

Of course, it does mean adding a little to the weight of the machine, and adding another gadget. But personally if one were offered the choice between carrying an air-speed indicator and carrying a Bramson gear, one would vote for the Bramson every time.

Moreover one would insist on having it fitted to all school machines as well as to active service machines, for it is just as important to accustom a pilot to the feel of it as it is to accustom him to watching the revolution indicator or speedometer. But here, as in the case of the Bristol tails, and probably improved controls on 'gas, we are still waiting for the air experts to make up their minds.

Meantime R.A.F. pilots and civilian aviators go on being killed just because our experts in the Air Ministry, and to a lamentably large extent in the Trade, keep on thinking along the old grooves and will not look around for new ideas. It is all very much as if motor-car makers insisted on sticking to smooth tyres and back-wheel (or propeller-shaft) brakes and refused to fit non-skid tyres and four-wheel brakes.

Of course we shall come out on top in the end. But, as in all our history, we shall pay heavily in money and blood before doing what we might do in a quarter of the time by sweating our brains a bit.—C. G. G.

took his ticket in 1910. But up to the outbreak of war in 1914 most of his time was devoted to motor business.

During the War he served with the R.N.A.S. and commanded the repair depot at Dunkirk and afterwards at Duinnes. While serving at Dunkirk he had a very bad crash in a Sopwith two-seater piloted by another officer and made quite a wonderful recovery.

When Major-General Sir Hugh Trenchard organised the Independent Force, R.A.F., Lt.-Col. Warwick Wright was sent to organise the great repair depot at Courban, where he had ten thousand men under him. After the Armistice he was put in charge of the Aircraft Depot at Sheffield where, among other feats, he organised the mass production of coffins for victims of the influenza plague. Thereafter he was concerned with an enormous deal in American motor transport in occupied German territory, and later had to do with the buying up of the great Slough motor transport depot.

One gives these notes on Colonel Wright because, although he was a famous figure in mechanical sport before the War, his name is not so familiar to the younger generation of aviators, and it is well that they should realise that Sir Alan's partner in this venture is a sportsman and a business man.

One is not at liberty to disclose details of the plans of Alan Cobham Aviation Ltd., but one can say that it embraces a scheme to popularise and commercialise aviation in a way which if successful should go a long way towards making this nation air-minded. Sir Alan Cobham is already in the States and Colonel Wright is now on his way thither to investigate American designs and methods of production, particularly in relation to aeroplanes at low prices.

An evening paper has said that the scheme includes the selling of cheap seaplanes, but actually it goes a great deal further than that. With Sir Alan's enthusiasm and Colonel Warwick Wright's business ability one has great hopes that Alan Cobham Aviation Ltd. may become a very important factor in the future of British Aviation.—C. G. G.

THE DE HAVILLAND "MOTH" SEAPLANE

Already acknowledged to be the most practical small aeroplane, the "MOTH" in its new form, equipped with Short-built duralumin floats and the Mark II "Cirrus" engine, enters a new sphere—that of the light seaplane.

For training, club flying, patrol work or private touring it is in a class by itself.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE ROYAL AIR FORCE.

The London Gazette.

Nov. 23.

GENERAL DUTIES BRANCH.—The following Pts. Ocs. are promoted to the rank of Fly. Oc.:—J. W. M. Nancarrow (Oct. 14); J. H. C. Purvis (Oct. 17); H. A. M. Weir (Oct. 31).

Fly. Off. G. C. A. Armstrong is seconded for service as A.D.C. to the Governor of South Australia (Nov. 13).

Fly. Off. S. A. Lane is transferred to the Reserve, Class A (Nov. 22). The following Fly. Offs. relinquish their temp. comms. on return to Army duty:—H. A. Crommelin (Lt., Duke of Wellington's R.) (Nov. 6); E. V. H. Hudson (Lt., Middx. R.) (Nov. 20).

STORES BRANCH.—Fly. Off. on probation P. Alderson is confirmed in rank (Nov. 8); Flt. Lt. A. Latimer is dismissed the service by sentence of General Court-martial (Nov. 8).

ACCOUNTANT BRANCH.—Flt. Lt. S. G. Linssen is placed on the retired list on account of ill-health (Nov. 24).

MEDICAL BRANCH.—Flt. Lt. P. A. Hall, M.B., is promoted to the rank of Sq. Ldr. (Nov. 26); Fly. Off. J. Parry-Evans is promoted to the rank of Flt. Lt. (Nov. 19); temp. Capt. J. R. Williams, General List (Army) Dental Surgeon, is granted a temp. comm. as a Flt. Lt. (Nov. 2). He will continue to receive emoluments from Army sources. Flt. Lt. J. S. Smith (Capt., Army Dental Corps) relinquishes his temp. comm. on return to Army duty (Nov. 1).

RESERVE OF AIR FORCE OFFICERS.—Fly. Off. C. J. Clark ceases to be employed with the Regular Air Force (Nov. 21).

The following are transferred from Class A to Class C:—Flt. Lt. W. N. Cumming (Sept. 5); Fly. Off. C. Dutton (June 19). Fly. Off. W. J. Hutchinson, M.B., is transferred from Class D2 to Class D1 (Nov. 12).

The following officers relinquish their comms. on completion of service:—Fly. Off. K. W. Brewster, M.C. (Aug. 28); Flt. Lt. A. Roberts, Fly. Off. S. L. Cannon, Fly. Off. P. A. Cockeram, M.C., Fly. Off. A. V. Gash, Fly. Off. B. J. Paget, Fly. Off. W. P. Woodcock (Oct. 24); Fly. Off. M. H. McErlean, Fly. Off. H. Wisnekowitz, M.C. (Nov. 8); Sq. Ldr. T. S. Impey (Nov. 11); Fly. Off. E. G. King (Nov. 22).

AUXILIARY AIR FORCE.—GENERAL DUTIES BRANCH.—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—Sq. Ldr. (Hon. Wing Cdr.) A. W. H. James, M.C., resigns his comm. (Nov. 19).

To be Sq. Ldr.—Capt. the Right Hon. F. E. Guest, P.C., C.B.E., D.S.O., M.P., to command the squadron (Nov. 19).

The following to be Pts. Offs.:—No. 601 COUNTY OF LONDON (BOMBING) SQUADRON.—K. I. Forbes-Leith (Aug. 17). No. 600 CITY OF LONDON (BOMBING) SQUADRON.—J. C. Larking (Nov. 23). No. 605 COUNTY OF WARWICK (BOMBING) SQUADRON.—C. L. Knox, V.C. (Nov. 23).

Appointments.

Week ending Nov. 30.

GENERAL DUTIES BRANCH.—Air Commodore E. L. Gerrard, C.M.G., D.S.O., to R.A.F. Depot, Uxbridge, pending posting on transfer to Home Estab., 25/10.

Group Captains U. J. D. Bourke, C.M.G., to H.Q., Wessex Bombing Area, Andover, for Air Staff duties, 22/11. Hon. J. D. Boyle, C.B.E., D.S.O., to Station H.Q., Worthy Down, to Command, 1/12.

Wing Commanders J. H. Herring, D.S.O., M.C., to No. 2 F.T.S., Digby, pending taking over command, 1/12. W. G. P. Young, O.B.E., to Air Ministry (Directorate of Equipment) for duty as R.A.F. Representative on Board of Management, N.A.A.F.I., 22/11.

Squadron Leaders A. Lees, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 21/11. B. F. Moore, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. R. P. Willock, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11.

Flight Lieutenants M. L. Taylor, A.F.C., H. M. K. Brown, W. A. K. Dalzell, G. E. Wilson, H. W. Baggs, J. H. Winch, J. D. S. Denholm, F. G. Gibbons, D.F.C., and H. Norrington, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11. J. McG. Fairweather, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. C. E. W. Foster, to No. 406 Flight, Donibristle, on transfer to Home Estab., 6/10. E. H. Bryant, to R.A.F. Training Base, Leuchars, on transfer to Home Estab., 16/10. E. S. Moulton-Barrett, to R.A.F. Training Base, Leuchars, on transfer to Home Estab., 13/10.

Flying Officers (Hon. Flt. Lt.) K. M. Murray, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/8. J. H. Caulfield, to No. 1 F.T.S., Netheravon, 1/12. A. E. B. Bateman, to R.A.F. Station, Donibristle, on transfer to Home Estab., 6/10. I. J. E. Thornton and G. P. Mee, to R.A.F. Depot, Uxbridge (Non-effective Pool) on transfer to Home Estab., 17/10. A. E. Rogenhagen, L. Butler, C. H. A. Farnon and F. B. Young, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. R. H. Giles, to No. 503 Sqdn., Waddington, on transfer to Home Estab., 17/10. H. S. Dawe, to No. 1 School of T.T. (Apprentices), Halton, on transfer to Home Estab., 17/10. H. C. Gammon, R. Tuck, J. M. Wyer, M.B.E., D.S.M., H. D. Wardle, R. R. Greenlaw, M.B.E., and E. E. Arnold, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11. E. A. Hodgson and E. V. S. Lacey, to R.A.F. Depot, Uxbridge (Non-effective Pool) on transfer to Home Estab., 4/11.

MEDICAL BRANCH.—Group Captain H. V. Wells, C.B.E., to R.A.F. Depot, Uxbridge, pending posting on transfer to Home Estab., 4/11.

Squadron Leaders E. A. Lumley, M.C., M.B., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. E. W. Craig, M.C., M.B., to H.Q., Mediterranean, 16/11. J. Kyle, to Air Ministry (Directorate of Medical Services), 16/11.

Flight Lieutenants (Hon. Sq. Ldr.) W. R. Reith, M.D., A.M., to R.A.F. Depot, Uxbridge, 15/11. E. C. K. H. Foreman, to Station H.Q., Bircham Newton, 22/11. J. D. Leahy, M.C., M.B., B.A., and F. W. C. Smith, M.B., B.A., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. L. P. McCullagh, M.B., to R.A.F. Depot, Uxbridge (Non-effective Pool) on transfer to Home Estab., 17/10. Flight Lieutenant (Dental) J. R. Williams, to H.Q., Halton, on appointment to a Temp. Comm., instead of to H.Q., Cranwell, as previously notified, 2/11.

Flying Officers H. C. Patterson, to R.A.F. Depot, Uxbridge (Non-effective Pool), on transfer to Home Estab., 17/10. J. O. Priestley, D.M.R.E., to R.A.F. Hospital, Cranwell, 24/11.

STORES BRANCH.—Squadron Leaders P. Adams, O.B.E., and F. Grave, M.B.E., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10.

Flight Lieutenants F. J. W. Humphreys, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/10. F. J. B. Powell, M.B.E., to Station H.Q., Bircham Newton, on transfer to Home Estab., 4/11.

Flying Officers R. W. Stevenson and D. W. Dean, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11.

ACCOUNTANT BRANCH.—Squadron Leader E. N. E. Waldron, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11.

Flight Lieutenants I. L. Wincer, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11. O. K. Griffin, to Station H.Q., Duxford, 25/11.

Flying Officers C. B. Rawlins, to R.A.F. Depot, Uxbridge, 23/11. J. L. Armstrong, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/11. F. R. Barton, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident at Kenley, Surrey, to a D.H.9a of No. 24 Sqdn., Kenley, on Nov. 22, Flt. Lt. Felix St. John Woollard, A.F.C., the pilot of the aircraft, was killed, and Fly. Off. Frederic Laing Collison was seriously injured and died shortly afterwards.

An inquest was held at Kenley on Nov. 26. Wing Cdr. H. le M. Brock said that he saw the aeroplane lose flying speed, slip to the left, and come down in a nose dive to the ground, where it caught fire. In a few minutes by the use of extinguishers the fire was got under sufficiently to allow the occupants to be pulled out.

The accident in his opinion was caused by bad flying—some error of judgment on the part of the pilot, who stalled in a flying turn, and that caused the nose-dive. So far as he could see there was nothing wrong with the machine.

The Coroner returned a verdict of *Accidental Death*.

[One gathers that though Flt. Lt. Woollard was officially the pilot, he was in fact engaged in giving landing practice to Mr. Collison, a war-time pilot who had rejoined with a Short Service commission and that probably Mr. Collison was flying the machine at the time of the accident.—C. G. G.]

No. 1 (Fighter) Squadron.

No. 1 (Fighter) Squadron now stationed at Hinaidi, Iraq, was disbanded on Nov. 1, and will be reformed as a unit of the Air Defences of Great Britain on Jan. 1.

No. 1 Squadron, R.F.C., was originally formed in 1912, as an Airship and Kite Squadron. It was disbanded in January, 1914, and reformed as an Aeroplane Squadron in May, 1914.

No. 1 Squadron joined the B.E.F. from England in March 1915. It was attached to II Brigade and equipped with Morane monoplanes.

The Squadron was again disbanded in January, 1920, after distinguished service in the War 1914-18. It was re-formed on the following day as part of the Indian Group, and stationed at Bangalore.

In August, 1921, the Squadron was transferred to the Middle East Command, Mesopotamian Group, and stationed at Hinaidi, near Baghdad.

No. 1 (Fighter) Squadron was the last unit in the R.A.F. to be equipped with Sopwith Snipe, but, in spite of the handicap of these obsolete aircraft, the Squadron has distinguished itself in the post-war operations in Iraq and Kurdistan.

The Sealand Court Martial.

A Court-Martial opened at Sealand on Nov. 15 under the Presidency of Group Captain E. F. Briggs, D.S.O., O.B.E., to hear the charges involving one officer and three men arising out of the flying accident on July 13, when L-AC Carr was killed.

L-AC. Dean was *acquitted* on the charge of negligently causing danger in flying to the life of an airman.

AC. J. T. Bond was found *not guilty* of the charge of negligently inspecting an aeroplane on July 9 and thereby endangering Fly. Off. Lingard.

Sjt. W. H. Clark was found *not guilty* on a charge of negligently causing danger in flight to the life of an airman.

The Court afterwards considered their sentences on another charge of failing to ensure that the aeroplane was properly inspected at the weekly inspection. Sentence on the latter charge will be promulgated in due course.

Flt. Lt. George Birkett was charged with negligently performing his duties by allowing an aeroplane to be flown on July 13 in an unserviceable condition. The defence was that Flt. Lt. Birkett had done everything possible to maintain the efficiency of the machines although much handicapped through not having sufficient riggers and fitters.

The Judge Advocate commented upon the amount of work that the accused had to do and the difficulties he had to contend with, owing to the general strike, when instructor were taken from him, and the lack of personnel in the Flight.

Flt. Lt. Birkett was found *not guilty*.

An Appointment.

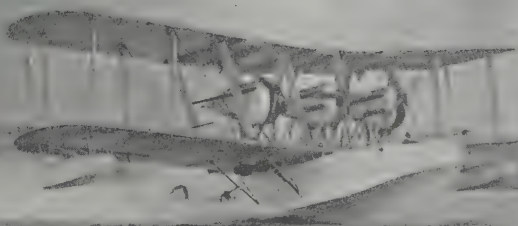
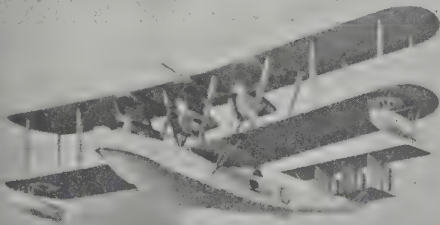
The London Gazette of Nov. 23 contains the following announcement:—

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of London (Bombing) Squadron. To be Squadron Leader, Captain the Rt. Hon. F. E. Guest, P.C., C.B.E., D.S.O., M.P., to command the Squadron. (Nov. 19.)

Captain Guest was Secretary of State for Air in 1921-22. He was formerly a Captain in the 1st Life Guards. He served on the White Nile in 1900, in South Africa 1901-2, and in the European War, 1914-16, and in East Africa 1916-17. He was awarded the D.S.O. in 1917 and the C.B.E. in 1919.

A Correction.

A reader writes pointing out an error in the paragraph referring to the retirement of Sq. Ldr. Jillings in THE AEROPLANE of Nov. 17. Serjeant-Major Jillings did in fact qualify as a pilot of the R.F.C. at the Central Flying School about May, 1915, and was employed as a pilot until 1916, when a medical board turned him down as unfit for flying as a result of his wound received in 1914.

One is glad to hear also that Sq. Ldr. Jillings has lately been appointed civilian Assistant-Adjutant of No. 5 F.T.S., Sealand, so that after all the R.A.F. will not lose him.

The R.A.F. Memorial.

The Secretary of the R.A.F. Memorial Fund points out that there is an error in THE AEROPLANE's account of the Armistice Day ceremony at the R.A.F. Memorial. The paragraph in question should read:—"A wreath was laid on the Memorial by Air Vice-Marshal Sir Philip Game, K.C.B., D.S.O., R.A.F., on behalf of the R.A.F. Memorial Fund."

R.A.F. SPORTS.

Rugby Football.

A match was played at Cranwell on Nov. 24 between a trial R.A.F. XV and the R.A.F. Cadet College. The Cadet College team, who put up an astonishingly good show, beat the representative side by 26 points to 13.

Association Football.

R.A.F. v. Cambridge University:—Cambridge beat the R.A.F. at Henlow on Nov. 27 by seven goals to nil. The first half was very even and most of the scoring was done in the second half.

The Times report of the match says:—

The R.A.F. never played together as a side, but, in spite of the seven goals, the mistakes of their forwards were more frequent than those of their backs. They had far more of the game than the score would suggest, and many chances came their way of gaining a little compensation for their defeat by scoring a goal themselves.

During the first quarter of an hour neither side played particularly good football, and the game hovered unsatisfactorily about in mid-field. Morris shot twice, but was too hemmed in to place the ball with any accuracy. After some clever passing between the Cambridge forwards, Lowe obtained possession of the ball when he was five yards or so from the goal. Flg. Off. G. A. Hadley had no chance of saving his shot, but Aircraftsman Jones, appearing from nowhere, somehow managed to get his shin in the way of the ball just as it was crossing the goal-line. The R.A.F. had quite a fair share of the play.

THE FUTURE OF THE NAVY.

Speaking in reply to the toast of the "Imperial Forces" at the annual dinner of the Scottish Clans Association, on Nov. 27, Admiral Cuming said that,—

only that day he had heard from one of the Lords of the Admiralty, "We want our Naval Arm still, so for heaven's sake rub it in your speech to-night." (Laughter.) Some concessions had been made during the past year, but the Navy was not yet satisfied with the constitution of the Air Force. Splendid as the Air Force was, and so ready to provide the Navy in time of war with skilled pilots and fine aeroplanes, the Navy said it was not good enough to put pilots who had been trained under military discipline into the Navy that way.

What the Navy wants is to train its own pilots and bring them up under naval discipline. If in the course of time we have our own pilots in the Navy Air Arm, and if there is another war, we should have the Admiral commanding the Fleet up in the air, and it would be a tremendous advantage.

One is reminded of the small boy in Church who after hearing a clergyman repeat several times at the end of his sermon, "What will be the future of our Church?" said to his father, "For Heaven's sake, tell him, Daddy, and let's go home."

THE R.A.A.F. PACIFIC FLIGHT.

On Nov. 24, Group Capt. Williams, D.S.O., O.B.E., Flt. Lt. I. E. McIntyre, C.B.E., A.F.C., and F-S. Trist, R.A.A.F., who are returning to Melbourne from Tulage, Solomon Islands, arrived at Rabaul, New Britain, after calling at Gizo, Kieta and Soraken en route.

On Nov. 25 they left Rabaul and arrived at Morabe.

On Nov. 29 they arrived at Samarai, New Guinea.

AUSTRALIAN NIGHT FLYING.

On Nov. 27 Sq. Ldrs. Hepburn and Wrigley, R.A.A.F., left Richmond, Sydney, N.S.W., at 20.20 hours to attempt to fly to Point Cook, near Melbourne, by night. They were compelled to land at Violet Town, 70 miles from Melbourne, at 02.00 hours on Nov. 28 owing to a leak in the petrol tank.

This was the first attempt at a long-distance night flight in Australia. The machine was in constant wireless communication with Melbourne and Sydney throughout the flight and two night-flying beacons at Goulburn and Albury were used for the first time.

ANTI-AIRCRAFT DEFENCE.

A lecture on Anti-Aircraft Defence was delivered by Major-General E. B. Ashmore, C.B., C.M.G., M.V.O., G.O.C. T.A. Air Defence Formation, at the Royal United Service Institution on Nov. 24. General Sir Walter P. Braithwaite, K.C.B., G.O.C.-in-C., Eastern Command, was in the Chair.

General Ashmore started with a brief survey of the history of air raids and the action taken to counter them. He said that the first principle of Air Defence was to have both ground and air forces under one command and that the lack of this co-operation was the reason why air raids over this country were not stopped until May, 1918.

He said that Air Defence had two schools of thought; the first was based on the bombing of enemy aerodromes and the second relied on placing defences close round places liable to attack. It was an admitted fact that fighting aeroplanes were the first and most important means of defence against air attack. But they must be supported by ground organisation and in certain places defence from the ground would be essential.

General Ashmore said that the present organisation consisted of two Air Defence Brigades in London, each with two Brigades of Artillery, a Searchlight Battalion and a Signal Company. The Artillery Brigades were now up to 80-90 per cent. of their establishment. It was essential that these units should be maintained on war establishment as Anti-Aircraft units could not be trained in an emergency.

The function of the anti-aircraft guns was to destroy enemy machines. But they were also preventive, and useful in breaking up formations. The searchlights were used to illuminate targets for our own machines and guns. The Signal Companies were used for collecting and distributing intelligence in addition to their other duties.

General Ashmore described the firing difficulties of an anti-aircraft gun. He said that the ranging was not done by trial and error but by means of a time fuse. There was still considerable difficulty in judging height from the gun station. He commended the Vickers predictor, which he said had unfortunately been sold to a Foreign Power before its value was realised here.

Describing the improvement in anti-aircraft gunnery, he said that in 1917 it took about 8,000 rounds to bring down a machine. Early in 1918 this was reduced to about 4,500 and towards the end of 1918 it only took 1,500 rounds.

Dealing with the present time he said that practice methods had been greatly improved. The sleeve target was used. This was towed by 2,000 yards of cable and was not at all easy to manipulate. However the R.A.F. did it very well.

Referring to the searchlights he said that these would only be used in future in co-operation with guns and aircraft. There would be no more searchlight patrols. It was the duty of the searchlight companies to work out height and track the raiding machines. A successful searchlight camp had been held at Manston this year in co-operation with the R.A.F. and without the guns.

General Ashmore then went on to describe the new system of observation posts which are being set up all over the country. The system was organised in collaboration with the County Police Forces and the G.P.O. The posts themselves were manned by Special Constables at no cost to the country. Kent, Sussex and Essex and parts of Suffolk and Hampshire were already covered with these posts. The G.P.O. had laid down special telephone lines and there should be no more than half a minute's delay between the observer at the post spotting the machine and the news being received at Headquarters.

One of the training difficulties lay in the fact that the Anti-Aircraft Defence Units were Territorials and with their limited training had to co-operate with the regular Units of the Royal Air Force. Thirty or forty Service aircraft were needed to cover practice over all four zones. The demands on the R.A.F. were very heavy. They were always met.

The following list of Air Defence Units may be of use to those readers of THE AEROPLANE who are interested:—

REGULAR ARMY.

Aldershot Command.—1st Air Defence Brigade (Blackdown): 1st A.A. Brigade, R.A.—1st A.A. Battery, 2nd A.A. Battery, 3rd A.A. Battery; 1st A.A. Searchlight Battalion, R.E.; 1st A.A. Signal Company, Royal Corps of Signals.

TERRITORIAL ARMY.

Eastern Command.—28th Air Defence Brigade (Tonbridge): 55th A.A. Brigade, R.A.—163rd (Kent) Battery.

London District.—26th (London) Air Defence Brigade (Duke of York's Headquarters): 51st A.A. Brigade, R.A.—151st (London) Battery, 152nd (London) Battery, 153rd (London) Battery; 52nd A.A. Brigade, R.A.—154th (London) Battery, 155th (London) Battery, 156th (Barking) Battery; 26th A.A. Battalion, R.E.; 26th A.A. Signal Coy., Royal Corps of Signals. 27th (London) Air Defence Brigade, Lytton Grove, Putney, S.W.15: 53rd A.A. Brigade, R.A.—157th (City of London) Battery, 158th (City of London) Battery, 159th (Lloyds, C. of L.) Battery; 54th A.A. Brigade, R.A.—160th (City of London) Battery, 161st (City of London) Battery, 162nd (City of London) Battery; 27th A.A. Battalion, R.E.; 27th A.A. Signal Coy., Royal Corps of Signals.

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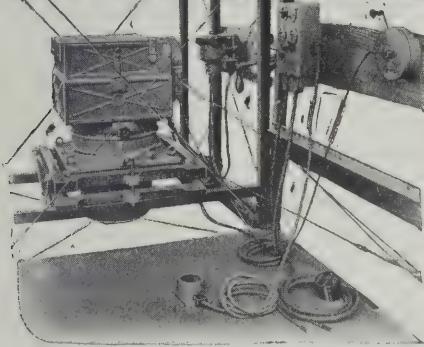
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AIR AFFAIRS IN PARLIAMENT.

CHERBOURG.

In the House of Commons on Nov. 24, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that the question of extending the British regular air service between Southampton and Guernsey to Cherbourg was primarily a matter for consideration by Imperial Airways Ltd. Occasional flights were taken to Cherbourg but the question of dispensing with the special permission required for each flight was at present under discussion with the French authorities. Col. Day suggested that this service would save a day between England and America. Sir Samuel Hoare thought it would certainly accelerate mails.

R.33.

In the House of Commons on Nov. 24, in reply to Mr. WELLS, the SECRETARY OF STATE FOR AIR said that there was no present intention of dismantling R.33.

THE CAPE-CAIRO ROUTE.

In the House of Commons on Nov. 24, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that an experimental air service between Cairo and the Cape would start early next year on the port of the route between Khartum and Kisumu. Further experimental flights were to be carried out by Service aircraft on other parts of the route to connect with this service. The object was a through route on commercial lines.

THE LIGHT AEROPLANE CLUBS.

In the House of Commons on Nov. 24, in reply to a question by LORD APSLEY, the SECRETARY OF STATE FOR AIR said that there were now six subsidised light aeroplane clubs in existence with a total of 962 members and associates. Of these 44 had qualified as pilots on club machines. Some of these pilots had already joined the R.A.F. Reserve, or the Auxiliary Air Force.

With regard to privately-owned aeroplanes, there were 33 on the register on Nov. 1, and 117 persons other than R.A.F. pilots held pilot's licences.

HYDE PARK.

In the House of Commons on Nov. 24, in reply to a question by LORD APSLEY, the SECRETARY OF STATE FOR AIR said that under present conditions of flying Hyde Park was not considered suitable for the purposes of a small aerodrome owing to the proximity of high buildings and trees and the densely populated surroundings.

R.100.

In the House of Commons on Nov. 24, in reply to Mr. VIANI, the SECRETARY OF STATE FOR AIR said that the sum of £60,000 for the purchase of airships in the Air Estimates of 1926 was not earned and therefore not paid in 1926. He expected that an instalment of £30,000 would mature for payment before the end of the present financial year.

AIR MINISTRY CONTRACTS.

In the House of Commons on Nov. 24, in reply to a question by MR. VIANI, the SECRETARY OF STATE FOR AIR said that it would not be in the public interest to disclose the prices paid or received by the Air Ministry.

THE BAGHDAD ACCIDENT.

In the House of Commons on Nov. 19, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that inquiry had shown that the cause of the accident at Baghdad on July 26, which resulted in seven deaths, was the breaking of the starboard engine crankshaft just after the aeroplane had taken off and was at a height of 100 ft. above the aerodrome. The reason why the pilot did not throttle back the port engine, which would have enabled the aeroplane to glide straight on, was apparently that he hoped to be able to reach some open ground on the right and to avoid obstructions immediately in his front. [The machine in question was a Vickers Vernon of No. 45 (Bombing) Sqdn., R.A.F.]

LORD THOMSON ON DEMOCRATIC FLYING.

The Lord Thomson, Secretary of State for Air in the Labour Government, speaking on Nov. 27, at the Morley College for Working Men and Women, said that there was a grave danger of aviation falling into the wrong hands. There was only one country which produced airmen comparable with the British—Holland.

The casualties in the air in the next war had been calculated at 80 per cent. per month and any war between two great countries would be a war in the air and would be won by the country which could most readily replace casualties.

While he was certain we were on the right lines we needed to develop the air habit and get the air sense, but we must see it was possessed by the democratic section of the people.

POPULARISING AVIATION IN THE STATES.

The American Nation is becoming air-minded at a great rate. Flying is already an integral part of the life and death of the nation.

The latest development of aeronautical progress is the use of aircraft in a "gang war" in Williamson County, Illinois, or thereabouts. Truly this is democratic flying.

The *Chicago Herald and Examiner* reports that "the Birger roadhouse (*Anglice*, roadside inn) was bombed by Shelton adherents," and says that this aerial warfare "may bring action by federal authorities, . . . based on the ground that the Government has control of the air, and that belligerent activities by private citizens may call for its intervention."

The use of the word "may" is distinctly precious, as indicating the doubt whether in God's own free country the Government has any right to interfere with the harmless pursuits of the animals, so to speak. Let this be a lesson to those revolutionaries in this effete Old England who clamour for the removal of Government Control of Aviation.—C. G. C.

THE PARIS SHOW "AEROPLANE."

The issue of THE AEROPLANE for next week will contain a full illustrated description of the Aircraft in the Paris Aero Show. It will be the biggest issue of this paper published in the past five years.

As the number of copies available will necessarily be limited readers who are not regular subscribers are strongly recommended to order copies from their newsagents at once, to avoid disappointment.

THE FATAL ACCIDENT TO COMMANDER BURG, U.S.N.

A verdict of "Death by misadventure" was returned at Croydon on Nov. 23 at the inquest on Commander Robert A. Burg, of the American Embassy, who was killed in an aeroplane accident on Sept. 21.

Major Clarence L. Tinker, who was the pilot of the machine, said the machine was in perfect order when he began the flight but 50 minutes later there was a vibration for which he could not account. He tried to make a forced landing, but could not get any response from the engine.

Major Cooper, of the Accidents Investigation sub-committee of the Air Ministry, said that the machine was completely destroyed by fire. He had come to the conclusion that the accident was due to engine failure. Evidence pointed to a defect in the ignition wiring.

SEMI-COLON.

On Nov. 24 two P.N.10 flying-boats (two 500 h.p. Packard engines each), left Hampton Roads, Norfolk, Va., in an attempt to fly non-stop to Colon, Canal Zone, a distance of 2,060 miles.

Both boats experienced considerable difficulty in getting off and had to taxi for nearly two miles before unsticking.

Five surface ships of the U.S. Navy were stationed along the route.

P.N.10 No. 1 was forced to alight 213 miles south of the Isle of Pines in the Caribbean Sea, with a broken connecting rod in the starboard engine, and was located by the U.S.S. *Cincinnati* after she had been down on the water for ten hours.

P.N.10 No. 2 was forced to alight near Neuvagerona, Isle of Pines, after running out of fuel and oil. She sent a wireless call for fresh supplies and intended continuing on being refueled.

ZURICH-CAPE TOWN.

On Nov. 28 Lieut. Mittelholzer, of the Swiss Army, Dr. Arnold Heim and M. Gouzy, left Zurich on a Dornier Mercur seaplane (450 h.p. B.M.W. VI engine) in an attempt to fly to Cape Town. He was compelled to return as a severe snowstorm prevented him from passing over the Alps, near the St. Gothard pass.

The flight will be in the nature of a scientific and photographic expedition and will follow the route:—Naples, Heliopolis, the Nile Valley, the Great Lakes of Africa, Beira and the East Coast to Port Elizabeth and Cape Town. Extended exploratory flights will be made over the Kilimandjaro and Ruwenzori ranges, the Congo Basin, the Zambesi River and Lakes Nyassa, Tanganyika and Victoria.

MARSEILLES-MADAGASCAR.

Lieut. de Vaisseau Bernard, who left Marseilles in company with Lieut. de Vaisseau Guilbaud in an attempt to fly to Majunga, Madagascar, arrived at the latter place on Nov. 22.

He is flying a Jupiter-engined Lioré-et-Olivier flying-boat and his route was via the West Coast of Africa to Dakar, and thence across Africa via the Congo, Niger and Senegal rivers to Lake Nyassa and Quilimane, on the East Coast of Africa.

He will attempt to return to Marseilles via the Nile Valley and the North Coast of Africa.

GERMAN AIRCRAFT AND THE PARIS SHOW.

M. André Granet, the *Commissaire Général* of the Tenth Exposition Internationale de l'Aéronautique at the Grand Palais, writes to say that the reason why there are no German exhibits is that all the disposable space in the Grand Nave had already been allotted before German machines became qualified for exhibition in the Grand Palais.

At the beginning of the present year the rule was made that no aircraft other than those built in countries which were members of the League of Nations, or one of the twenty-two Allied Powers during the War 1914-18, could be exhibited at the Exposition. Owing to various causes of delay, one of which, if one understands the affair rightly, was the objection of a country which had nothing whatever to do with the war, Germany has only recently been admitted a member of the League of Nations, and, as already mentioned, it was then too late for German machines to have space allotted to them at the Exposition.

However, Germany always has the satisfaction of knowing that the University of Göttingen is largely responsible for most of the modern wing sections which will be seen at the Exposition. And if Germany has not actually built any of the machines in the Exposition, at any rate many of them owe their general appearance largely to German ideas.

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THE BEST DIARY.

"The Royal Air Force and British Empire Air Services Diary, 1927." Published by permission of the Air Ministry. Gale and Polden Ltd., Aldershot. 1s. 6d., 2s. and 3s. net.

In a foreword to the 1927 edition of the R.A.F. Diary, the Secretary of State for Air says:—

The R.A.F. and British Empire Air Services Diary is, I am sure, increasing its circulation and usefulness every year. As the Air Forces of the Empire increase it will find its way into every part of the world. One of its numbers I filled with notes from cover to cover in my recent flying visit to Iraq. Another I shall certainly take with me when in the winter I fly to India. No doubt many hundreds of Air Force Officers are finding it equally handy. In their name and mine I wish it success.

A new feature in the 1927 edition of the Diary is an account of the Air War effort of the Dominions and a list of the principal events in the histories of the Dominions' Flying Services. Another useful thing is a list of the outstanding events affecting the British and Dominion Air Forces during the War, 1914-18.

The new edition also contains lists of the R.A.F. Stations and an outline of the organisation of the Commands.

A Civil Aviation section gives tables of machine flights, mileage, passengers, etc., a list of the flying clubs and some notes on Civil Aviation in the Dominions.

The Sports section has been brought up to date and the whole diary is just about as good as it could be.

A royalty of 10 per cent. of the published price of all copies sold is handed by the publishers to the R.A.F. Memorial Fund. A special binding has been prepared this year, consisting of a dark blue leather pocket-book with a strap fastening. This, with the diary, is 7s. 6d.—C. M. MCA.

UBIQUITOUS SIR CHARLES.

One has much pleasure in announcing that Sir Charles Cheers Wakefield, Bart., has consented to become a Vice-President of the Institution of Aeronautical Engineers, the President of which is Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P.

There will soon be hardly any activity concerned with aviation in which Sir Charles Wakefield does not take an active interest. And that is all to the good of aviation, for everything in which Sir Charles takes an interest is the better for his enthusiasm and kindliness. Like the famous Castrol lubricants with which his name is inseparably linked, Sir Charles has the gift of making things run smoothly.

The Institution of Aeronautical Engineers, which is coming very much to the front in these days, is to be congratulated on its latest acquisition.

THE ROYAL AERONAUTICAL SOCIETY.

The Royal Aeronautical Society announces with great pleasure that the Wilbur Wright Memorial Lecture to be delivered next May, will be given by Professor Prandtl of Göttingen University.

Professor Prandtl is known throughout the World's aeronautical communities as the great authority on aerodynamics, and his lecture will be one of outstanding importance.

It will be delivered in English.

FLYING ON ONE ENGINE.

Referring to the statement in THE AEROPLANE of Nov. 24 that the Supermarine Southampton is the only twin-engined machine which will maintain its height on one engine, a reader points out that the old Boulton and Paul Bourges actually flew about twenty-five miles across country piloted by Mr. Frank Courtney, with Mr. J. D. North and another passenger on board, with one engine completely out of action.

The more recent Boulton and Paul Bugle, with two Bristol Jupiter engines, not only retains its height with full load with one engine dead, but is able to climb with one engine running and turn against that engine.

In writing the paragraph one had in mind at the time only machines in regular service in the R.A.F. and in regular commercial use. So one apologises to the Bugle and the Bourges, whose wonderful aerobatic performances in the hands of Sq. Ldrs. Hill, Haig and Longton, at various times, one has admired at R.A.F. demonstrations at Hendon, Andover and Croydon.

EXPERIMENTAL FLYING.

The Journal of the Royal Aeronautical Society for November, 1926, contains among other interesting matter a paper read before the Students' Section of the Society by Flg. Off. R. L. Ragg, R.A.F., describing, from the pilot's point of view, the operations of making test flights—both the routine tests required in the case of new types of aircraft, and those more complicated types of test which are made particularly for research and development purposes.

In the paper Flg. Off. Ragg expressly disclaims any technical knowledge of aerodynamics, and keeps his account of test flying exceedingly clear and free from unnecessary complexities. It is nevertheless fairly clear that his aerodynamic knowledge is far from negligible, but that he has the gift of expressing clearly, in every-day language, ideas that are only too often made unintelligible.

THE MAKING OF THE JUPITER.

THE AEROPLANE has just received a copy of a booklet entitled "The Bristol Jupiter Air-cooled Aero Engine (Series VI) and its Production," which is a reprint of a series of articles recently published by *Machinery*.

This series of articles include a general description of the Jupiter VI engine as an introduction, followed by a detailed account of a number of the processes used in the Bristol Works at Filton in the manufacture of this type of engine.

There must be many aircraft engineers and mechanics who are familiar with the Jupiter or other types of aero-engine in the completed form but have little idea of the methods used in their manufacture to secure the extraordinary perfection of material and workmanship which characterises British aero-engines in general, and make the Bristol Jupiter in particular the World's premier air-cooled radial engine. To those who are directly concerned with the care and maintenance of such engines the methods of their manufacture must be of interest, and information on this subject should be of very considerable value.

It is the practice of British aero-engine manufacturers to issue for the guidance of users of their products exceedingly clear and complete handbooks dealing with the care and maintenance of each particular type of engine. It is universally recognised that it is not possible to acquire the whole art of engine maintenance from a study of any handbook, however exhaustive, without practical experience of the actual engines, and that for the most complete understanding of any mechanism of so complicated a type it is a decided advantage to have a fairly complete knowledge of how, and if possible why, its various components are made as they are made.

It is obviously impossible for all aero-engine mechanics to be sent for a course of instruction to the works wherein the engines which they are to handle are manufactured, but in default of such a course, a clear and well-illustrated account of the workshop processes at those works should be the next best alternative. Certainly everyone concerned with Jupiter engines ought to apply for a copy of this particular booklet.

The processes described and illustrated are by no means all those that go to the making of the Jupiter VI, but they do include a representative selection of some of the remarkably ingenious methods of manufacture which have been developed by Mr. Roy Fedden and his very able staff at Filton.

Generally speaking these methods are based on the extensive use of very carefully designed jigs and fixtures which render it possible to carry the machining processes very close indeed to the finished stage with the least possible risk of error. When this stage in manufacture has been reached the individual components are submitted to a final finishing process, in which human skill and patience are the most important factors.

The series of articles in *Machinery*, reproduced complete in this booklet, describe in detail a large number of these processes, and illustrate them both by photographs showing the operations in progress and by dimensioned drawings of some of the jigs and tools used, and gives a most interesting and lucid insight into Bristol manufacturing methods.

Readers of THE AEROPLANE who have not the opportunity of seeing the Jupiter being made should certainly attempt to secure a copy. It is to be obtained from The Bristol Aeroplane Company Ltd., Filton House, Bristol.—W. H. S.

THE BOOK OF THE LION.

D. Napier and Son Ltd. have just issued a book of instruction in the care, maintenance and overhaul of the Napier Lion Series V engine. This book is undoubtedly the most complete handbook for any one type of engine that has yet come within the writer's notice, and it is only open to one criticism—namely that the description of the engine itself is limited to a very brief introductory outline.

As a result the exceedingly precise and detailed instructions as to procedure in stripping, overhauling and replacing various components can only be followed with any facility in the presence of a sample engine or component. There are, it is true, numerous excellent illustrations, which enable one with a little trouble to elucidate the instructions without any detailed knowledge of the engine itself, but the value of the book would be increased if the descriptive matter were more complete and more detailed.

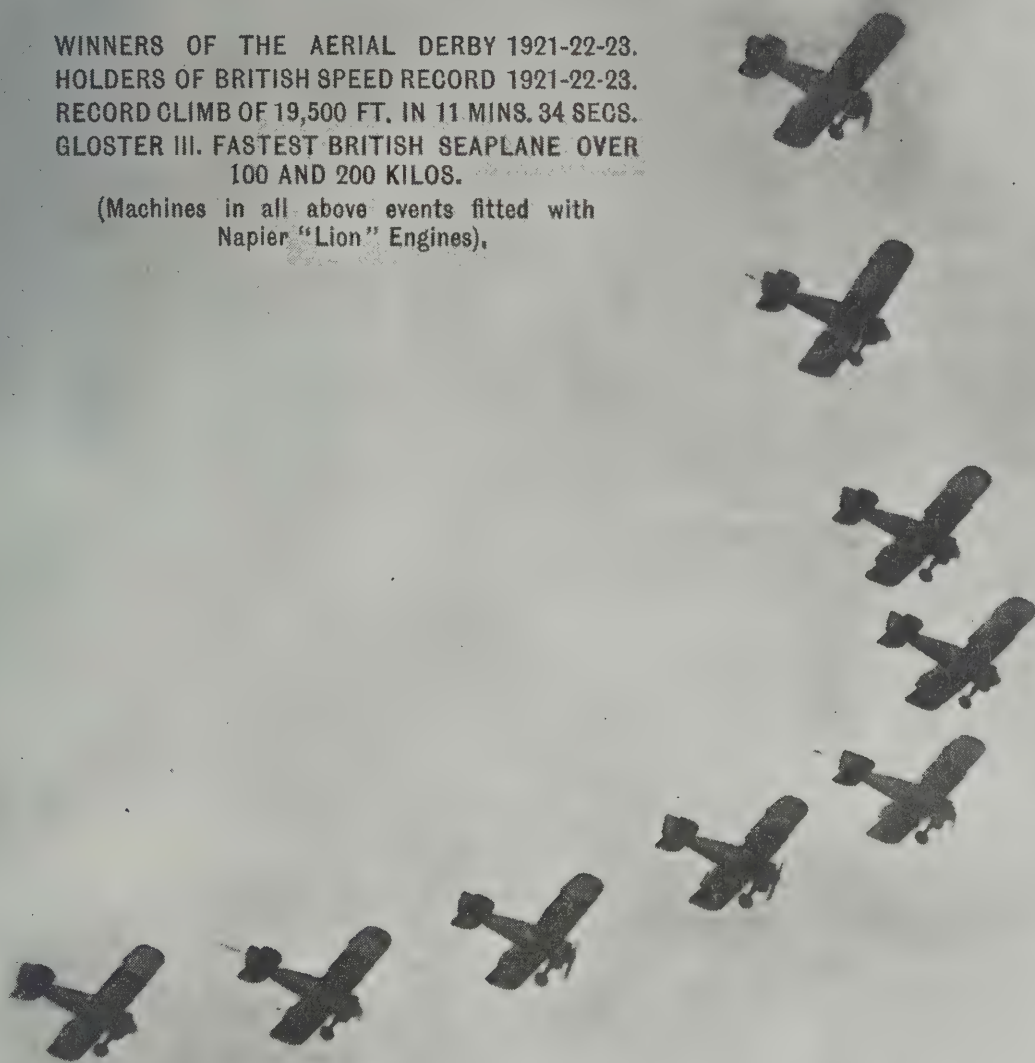
To the engineer or mechanic faced with an actual engine the book is all that can be desired as a manual, but one would suggest that it would be an improvement if it were so compiled that a reasonably intelligent reader, unfamiliar with the engine, but likely in the future to have occasion to deal with it, could gain a somewhat more definite idea of what he might have to do before he actually faced the job. This may perhaps be asking for too near an approach to perfection, but the manual is so complete in every other respect that it seems worth while to make an effort to remedy this one omission.

The book is excellently printed and bound, and is well worth the 10s. 6d. which is asked for it.—W. H. S.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



AN AERIAL COAST GUARD.—A Loening Amphibian (400 h.p. inverted Liberty engine), one of three purchased by the U.S. Coast Guard for use against smugglers and rum-runners.

THE U.S. COAST GUARD AIR SERVICE.

Under the new appropriations authorised by Congress at its last session the U.S. Coast Guard has formed an Air Service and in the first week of November it took delivery of its first aircraft. The need for a Coast Guard air unit has been apparent for several years, and since smugglers and rum-runners have taken to the air this need has grown more imperative.

The air unit will not be an independent branch of the Coast Guard, but will act as an auxiliary to the surface units. The aircraft will be under the direction of the commanding officer of the station to which they are attached.

The equipment chosen by the Coast Guard are Loening amphibians (400 h.p. inverted Liberty engines), and except for divergencies in equipment are similar to those already supplied to the U.S. Navy, Army and Marine Corps.

The Coast Guard equipment has a much larger wireless installation than is supplied as standard. In order to permit of operation in very rough water and to minimise the danger of injury from driftwood, an especially strong and thick metal hull bottom has been provided, with over three times the thickness than has heretofore been used.

In addition, the wing-tip floats are protected by special skids, not only against possible injury from wreckage, but also to enable the aircraft to be brought up onto rocky beaches.

Each machine is equipped with two Lewis guns.

The aircraft will have a range of 600 miles at 100 m.p.h. cruising speed. The Coast Guard Air Service has adopted light chrome yellow with black lettering for its aircraft, as possessing good visibility and at the same time distinguishing it from other Service aircraft.

After the three machines had been tested and accepted two were flown to Gloucester, Mass., and the third to Cape May, N.J. The Chief Coast Guard Air Station is at Gloucester, and is commanded by Lieut.-Comm. C. C. Von Paulsen, U.S.C.G.

Lieut.-Comm. Von. Paulsen has made experiments with a special type of reel and life line to be used by the aircraft in running a line from wrecks to the shore, where the vessel might be too far off shore for the effective use of the older mechanism.

SHOWING THE AMERICAN FLAG.

With the object of showing the flag, which in this case means the quality and efficiency of American aircraft and pilots, throughout South America, the U.S. Army Air Corps has organised a *Pan-American Flight*, which will leave Kelly Field, San Antonio, Texas, on Dec. 15, and after flying through every South American Republic will return to Washington on Apr. 1.

The flight will consist of five Loening amphibians (400 h.p. inverted Liberty engines) and the officer personnel will be Major H. A. Dargue, in command; Capt. A. R. McDaniel, I. C. Eaker, C. F. Woolsey; 1st Lieuts. B. S. Thompson, L. D. Weddington, C. McK. Robinson, M. S. Fairchild, E. C. Whitehead, and J. W. Benton.

The flight will pass through the following republics and islands:—Mexico, Guatemala, Salvador, Honduras, Costa Rica, Panama, Colombia, Peru, Chili, Argentina, Paraguay, Brazil, French Guiana, Dutch Guiana, British Guiana, Trinidad, Venezuela, Isle of Grenada, Isle of St. Vincent, Isle of Martinique, Virgin Islands, Porto Rico, Dominican Republic, Haiti, Cuba, thence to Florida and Washington.

The total distance to be covered will be 18,524 miles, and the cost of the flight is estimated at \$54,000. The organisation of the flight has been undertaken with the thoroughness that characterised the first flight across the Atlantic by the U.S. Naval Air Service and the Round-the-World Flight by the U.S. Army Air Service.

For this purpose the flight itinerary has been divided into six divisions, and an officer has been detailed to every division to precede the flight and to make all necessary ground arrangements. At each stopping place, of which there are seventy-one, the most suitable landing field or water area will be selected and provided with appropriate markings. Provision will be made for the supply of fuel and for the placing of spares parts at important bases and sub-bases.

MADAGASCAR DIRECT.

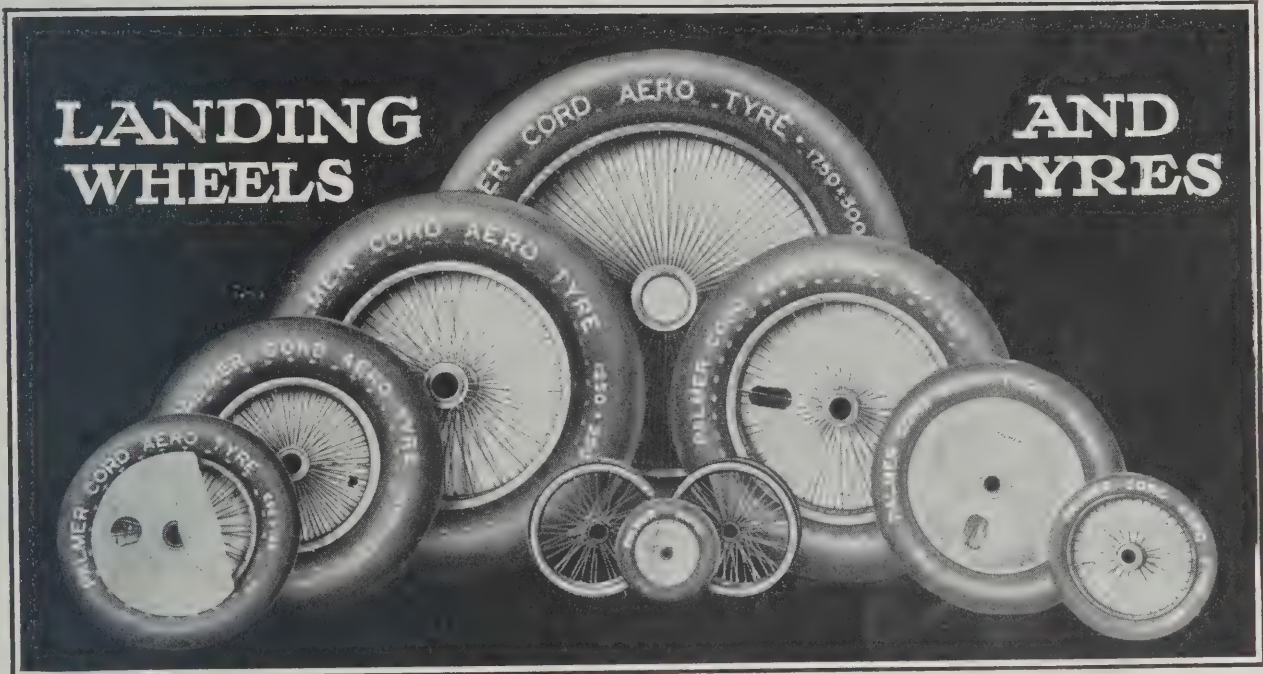
On Nov. 28, Commandant Dagnaux and Sergeant Dufort left Le Bourget on a Breguet XIX biplane (600 h.p. Renault engine), in an attempt to fly to Madagascar. They were forced to land at Lyon owing to dense fog. Since then they have reached Istres.



TO SHOW THE FLAG.—One of the five Loening Amphibians (400 h.p. inverted Liberty engine) to be used on the "Pan-American Flight" to be carried out by the U.S. Army Air Corps between Dec. 15, 1926, and Apr. 1, 1927.



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| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 2.0 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 125. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
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*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings.
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THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Nov. 28.

Flying during the past week was confined to Saturday and Sunday. Total flying time 10 hrs. 55 mins.

The following members had instruction:—H. Spooner, Lieut.-Cdr. Mackintosh, D. H. P. Esler, E. J. B. King, Miss Fletcher, T. C. Sharwood, J. A. Simson, L. C. Davey, G. L. Gardner, C. E. Murrell, H. Solomon, G. Eady.

The following members made solo flights:—E. E. Stammers, H. Petre, C. E. Murrell, S. O. Bradshaw, O. J. Tapper, G. H. Craig, A. R. Ogston, Miss O'Brien, W. Hay, A. G. D. Alderson.

The following members had joy-rides:—G. F. Wilson, R. C. Presland, E. H. Saxon Mills, Miss Johnston.

Christmas Holidays.—The Club will be closed down during the Christmas Holidays, from Thursday, Dec. 23, to Thursday, Dec. 30.

The late Mr. Michie.—The accident, resulting in the death of the Ground Engineer, Mr. J. S. M. Michie, and severe injuries to S. L. F. St. Barbe, the pilot instructor, came as a great blow to the Club.

The D.H. Moth G-EBNP was being tested in the ordinary way before being handed over to members for solo flying. At the time of the flight, 1.15 p.m., very few people were on the aerodrome and it is impossible to obtain any reliable information as to what led up to the crash.

Mr. Michie has been the Ground Engineer since the inception of the Club. He has carried out all his duties in such a manner as to win the admiration of all who came in contact with him. He had the implicit confidence of the pilot instructors and all the members and his loss to the Club will be keenly felt.

The injuries to St. Barbe are not quite so serious as was thought at first and he is now making very good progress.

The London Aeroplane Club wish to extend their warmest thanks to all the Flying Clubs and members who sent messages of sympathy. The esteem in which Mr. Michie was held was shown by the large number of messages received from all parts of England. To the parents of Mr. Michie we extend the deepest sympathy. In their great loss it must be a consolation to them to know that their son by his unassuming manner and his devotion to his work, was beloved by all.

The Lancashire Aero Club.

Report for week ending Nov. 27.

The wind having dropped and the rain having stopped, the weather has been perfect—if only one could have seen it. Unfortunately, however, it has been obscured by a dense fog during the greater part of the period.

Total flying time for the week 20 hrs. 55 mins., made up as follows:—

Dual with Messrs. Brown, Cantrill and Scholes:—Messrs. Stern 1 hr. 45 mins., Twemlow 1 hr. 10 mins., Blagden 1 hr., Miss Brown 55 mins., Messrs. Nelson 40 mins., Crosthwaite, Forshaw and Fray 30 mins. each, Keyes, Leigh and Wade 25 mins. each, Slater and Dickinson 35 mins. each, Moore, McNair, Meads, Gattrell, Anderson and Newton 20 mins. each, Davidson and Harper 15 mins. each, Michelson 10 mins.

Solo:—Messrs Costa 2 hrs. 5 mins., Lacayo 1 hr. 5 mins., Goodfellow 40 mins., Williams 20 mins., Scholes 20 mins., Hardy 20 mins., Cantrill 5 mins.

"Joy"-rides:—With Mr. Leeming, Mr. Brown 40 mins., Wood 20 mins. With Mr. Scholes, Mr. Leeming 20 mins., Wood 15 mins. With Sir W. S. Branceker, Mr. H. A. Brown 15 mins. With Mr. Goodfellow, Mr. Bertram 10 mins., Blagden 10 mins.

Test flights:—2 hrs. 10 mins.

Lest Capt. Lamplugh should suspect for a moment that we have been flying with a visibility range of less than 500 ft., let us hasten to assure him that during misty weather a Scottish member, armed with a telescope, is placed on the aerodrome at a distance of 501 ft. from a half-crown. If this becomes lost to sight the alarm is immediately raised and all flying ceases.

We were very glad to see the Air Ministry representatives on Tuesday, when Mr. Goodfellow so overwhelmed them with statistics that both the D.C.A. and A.D.C.A. had to take the air after lunch in order to clear their minds.

The only sad part of the show was that Yorkshire claimed them for the evening, so that they were unable to stay for the Club supper, which one feels they would have enjoyed. It was very well attended and completely successful, the guest of honour in the D.C.A.'s absence being the Sesqui-Liberian Air Attaché. This gentleman's striking appearance, clad in morning coat, plus fours, dancing pumps and a white beaver fully justified the M.C.'s introductory statement to the effect that "the attaché, ladies and gentlemen, is a bit of a case."

The Newcastle-upon-Tyne Aero Club.

Report for week ending Nov. 27.

Another dismal report. Total flying during the week was 2 hrs. 15 mins.

LX is still under repair and LY was only put on service on Saturday, after engine overhaul. A little flying was done on Saturday and Sunday morning. Unfortunately, in taking off Mr. Mathews collided with the boundary fence, damaging the machine rather considerably.

Mr. R. N. Thompson flew with Mr. Wilson as passenger, Mr. W. Baxter Ellis with Mr. Turnbull, Mr. C. Thompson with Mrs. Heslop, and Mr. H. Ellis, the Club's newest "A" Pilot, flew alone for half-an-hour.

Reference the remarks of the Yorkshire Club in last week's issue. We are glad to say that no lady member of this Club has as yet done anything approaching 80 hours' instructional flying. We congratulate them on beating our ladies' record of eight hours, which is the shortest time a lady has been under instruction before actually going solo. We wish their lady members every success, and hope that this week's report confirms the hopes raised last week.

Report for week ending Nov. 28.

The only flying for the week was 1 hr. 25 mins., on Sunday.

Mr. Parkinson was "launched" for 10 mins. on LX, which has recently been under repair for some small details, and put up quite

a good show. His flying was considerably better than that usually performed by one carrying out a first solo flight (as, of course, it ought to be), and he made an excellent landing. He was allowed, after this, to carry on instruction, the first flying he had done for four and a-half weeks. The members who had instruction were Mr. Turnbull and Mr. Rasmussen, who each flew for 30 mins.

Mr. Irving flew for 15 mins. solo, but the weather was so bad that he decided not to stay up any longer, although he is very keen to complete the three hours necessary before he does his tests.

Several games of Badminton and a little work on the Camel completed the week's work.

There was considerable activity on the engineering side, however, in addition to the repairs to LX, as LY was being dismantled prior to being returned to its birthplace, Stag Lane, for repairs after the crash of last week, though the method employed was rather more gentle than the original operation of a week ago. An ironic touch is given by the receipt of an account for repairs to the damaged fence, but this is not quite such a serious item as that for the repairs to the machine will probably be, fortunately.

The Yorkshire Aeroplane Club.

Report for week ending Nov. 26.

Total flying time 9 hrs. 15 mins., as follows:—Solo, 5 hrs. 5 mins.; Dual, 4 hrs.; and a 10 mins.' Test.

Sunday was quite a busy day and with both machines now in commission we managed to put in 7 hrs. 20 mins.

The following members flew solo:—Messrs. Dawson, Lax, Mann, Norway and Watson. Dual instruction:—Messrs. Brown, Gratwick, Little, Mann, Swift, Wilson, and Capt. Beaumont.

This has been a week of calling to account and setting our house in order. The house, of course, was nothing like in order when the Air Ministry's Committee of Inspection arrived: we are now busily thinking of all the things we might have said and wondering if other Clubs are in the same plight.

We wish to take this opportunity of offering our deepest sympathy to the London Club upon their accident.—R. O. L.

The Midland Aero Club Ltd.

Report for week ending Nov. 26.

Total flying time 2 hrs. 31 mins.

Very high winds and heavy rain restricted flying. Mr. J. Brinton made two solo flights and Mr. H. Smith was given dual instruction. The Austin Whippet was flown twice by Mr. McDonough.

The first Midland Aero Club Dance is being held at the Palace Ballroom, Erdington, on Thursday, Dec. 9, from 8 p.m. to 12 p.m. Tickets, price 5s. each, may be obtained from the Secretary, 22, Villa Road, Handsworth, or from Mr. S. H. Smith, "Windermere," Orchard Road, Erdington, Birmingham.

Report for week ending Nov. 27.

Total flying time 7 hrs. 47 mins.

The following were given dual instruction:—G. V. Perry, A. M. Glover, S. H. Smith, C. Fellowes. The following made solo flights:—G. V. Perry, J. Brinton, H. J. Willis, W. Swann, A. M. Glover, R. L. Jackson. Test flights 43 mins.

The Austin Whippet was flown several times by H. J. Willis and G. V. Perry, the latter making his first flight on this machine on Saturday.

With the Club Moths and Austin Whippet and the Avros and the D.H.9as of No. 605 Bombing Sqdn., R.A.F., in the air, Castle Bromwich presents quite a busy appearance. All of which should help to create the air sense and revive interest in Aviation.

The Hampshire Aeroplane Club.

Report for week ending Nov. 25.

Total flying time 8 hrs. Instruction flying 3 hrs. 25 mins. Passenger flying 1 hr. 20 mins. Solo flying 3 hrs. 15 mins.

The following members had instruction:—Keeping 1 hr., Shepherd 40 mins., Bound 25 mins., Rumble 20 mins., Nicholson 15 mins., Cooper 10 mins., Kerry 10 mins., and the Hon. H. R. Grosvenor 25 mins.

The joy-riders were:—Miss Fry, Miss Hoare, and Mr. Lawrence.

The soloists were:—Perfect 55 mins., Lieut. Graham, R.N., 30 mins., Bowen 20 mins., Rumble 20 mins., Flg. Off. Clarkson 20 mins., Flg. Off. Odberth 18 mins., Fry 15 mins., Bound 12 mins., and Nicholson 5 mins.

Competition is very keen between several of the soloists who are members of the Avro staff, and during the lunch hour each day there is a sprint race across to the Club-house to stake claims for Moths. One day last week the Publicity Secretary was disqualified for using a bicycle, which was promptly confiscated. He was heard muttering something about revenge, and it is a notable coincidence that he put one Moth out of action the next day by making a "heavy" landing with consequent damage to the axle and propeller.

WITH BANJULELE TO BAGHDAD.

On Nov. 23 Mr. T. N. Stack and his banjulele and Mr. B. S. Leete, who are attempting to fly to India on two D.H. Moths (80 h.p. Cirrus Mk. II engines), arrived at Marseilles from Paris where they had been held up by bad weather.

They were again held up by unfavourable weather, but on Nov. 26 they proceeded to Pisa. The local Marseilles papers commented very favourably on the two Moths and also on the banjulele!

On Nov. 29 they arrived at Naples and reported a very pleasant journey with courteous help from everyone.

THE NEXT R.Ae.C. DINNER.

The next monthly House Dinner of the Royal Aero Club, will be held at the Club on Wednesday, Dec. 8, at 7.15 p.m., when a discussion will be opened by Mr. C. R. Fairey. The Chair will be taken by Lord Thomson.

MYSTERY AT THE S.B.A.C.

One gathers that certain firms received a notification that a meeting of the S.B.A.C. would be held on Nov. 31. Possibly this highly secret day was chosen on which to discuss Schneider secrets for 1928.



The Westland Widgeon.

THE WESTLAND WIDGEON

THE Westland Widgeon is a small Monoplane of sturdy and simple construction, fitted with an Armstrong-Siddeley "Genet" Engine of a nominal 60 H.P., but actually giving over 70 H.P. The machine has therefore ample power and can be flown at a comfortable speed with the engine well throttled down, which gives a very much longer life to the engine.

Some Points to Note.

1. The Machine has a very good take off and can get out of very small spaces without difficulty.
2. It carries pilot and passenger. The useful load apart from the fuel and oil is 380 lbs., which is ample for passenger, pilot and luggage.
3. It has particularly good flying qualities and is very easy to handle. It can be fitted with dual control.
4. The undercarriage has steel spring shock absorbers and friction dampers to absorb the recoil.
5. The petrol is carried in a 12-gallon streamline tank above the top wing, which gives a cruising flight of three hours. The oil is carried in a streamline tank on the port side of the fuselage.

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| Fuel capacity | | 12 gallons. |
| Useful load apart from fuel and oil | | 380 lbs. |
| Surface | | 145 sq. ft. |
| Span | | 30 ft. 8 ins. |
| Width, folded | | 9 ft. 9 in. |
| Length | | 20 ft. 5 in. |
| Petrol consumption | | 20 Miles per gallon. |

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 12; Tuesday, 8; Wednesday, 13; Thursday, 2; Friday, 5; Saturday, 9; Sunday, 6.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 24, passengers 87, freight 9 tons.

AIR UNION:

Paris—London: Machines 13, passengers 17, freight 12½ tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 6, passengers 3, freight 1 ton.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 10, passengers 7.

PRIVATE:

Machines 2, passengers 0.

Total number of trips by British Machines, 26, carrying 87 passengers. Foreign Machines, 29, carrying 27 passengers.

Comparative Figures:

Week ending Nov. 28:

Machines, 55; Passengers, 114; Crews, 68; Total personnel, 182.

Corresponding week, 1925:

Machines, 36; Passengers, 79; Crews, 41; Total personnel, 120.

Corresponding week, 1924:

Machines, 75; Passengers, 213; Crews, 98; Total personnel, 311.

Corresponding week, 1923:

Machines, 15; Passengers, 24; Crews, 23; Total personnel, 47.

Corresponding week, 1922:

Machines, 49; Passengers, 120; Crews, 94; Total personnel, 214.

Corresponding week, 1921:

Machines, 19; Passengers, 13; Crews, 30; Total personnel, 43.

Corresponding week, 1920:

Machines, 39; Passengers, 58; Crews, 45; Total personnel, 103.

Croydon Notes.

There is much feverish mental activity at Croydon. Passengers arriving by air have noticed the disturbed state of the air near the aerodrome. Pilots are seen wearing horn-rimmed spectacles and wet towels round their heads. They rush about with satchels on their backs as though on the way to school. And what is the cause of this studious university air?

The Air Ministry has decreed that on and after Jan. 1, 1928, every aircraft carrying more than 10 passengers for a journey of more than 100 miles must carry a certified 2nd class navigator.

Therefore there were two courses open to Imperial Airways Ltd. They could either engage 2nd class navigators to travel in each machine or they could make their pilots pass the necessary examinations. The latter course is to be adopted.

Presumably the reasoning was that if a pilot were flying on a route he knew well and the clouds were close to the ground, he would rather trust in his own judgment and fly by landmarks he knew below the clouds than go above the clouds or through them with the assistance of all the skilled navigators in the world. If, however, he himself were a skilled navigator he would not mind trusting to his own judgment and then he would fly above the clouds. For which, taking it by and large once again, one does not blame him.

But it is rather hard on a man who is doing a whole-time job as pilot to expect him to pass an examination in 15 months which often takes a man three or four years to pass. And one hears that the pilots on the Cairo—Karachi service are expected to pass in about six weeks!

Hence the studious atmosphere of Croydon. One may shortly expect the appearance of caps and gowns, followed by the arrival of proctors and bull-dogs. Then perhaps Croydon may join in the Boat Race next year on the surface.

A Rohrbach Roland three-engined monoplane arrived at Croydon last week. The engines are 230 h.p. B.M.W. This machine is a tabloid edition of the Beardmore Invincible now almost completed at Dalmaur. This machine will have three 670 h.p. Rolls-Royce Condors and it is hoped that it will have a speed of about 145 m.p.h. It will be tested in the comparatively near future at Martlesham.

Talking of Martlesham, some months ago one was made in these notes to cast a reflection on the Martlesham staff. This has somewhat naturally caused a certain amount of annoyance at Martlesham. One may say that one said nothing of the sort and that remark was interpolated in that curious process known as editing. The Martlesham staff are as efficient a body as one could want. What is wrong with Martlesham is the Air Ministry system which causes heart-breaking delay with new machines. And this delay is just as heart-breaking to the Martlesham pilots as it is to the constructors.

M. Delage, the well-known Air Union pilot, pulled the legs of Imperial Airways' pilots recently. He walked up to his Goliath with a small toy airscrew which he solemnly pinned onto its nose, remarking, "Argosy! I fly now in any weather."

The improvement in the aerodrome hotel now that it has passed into the hands of Barclay and Perkins is enormous. The cooking is good and the food is much cheaper. Things which have been wanted for years are now provided. A piano has been put in the lounge and there is music and merriment within. There is to be a dance every week and a cabaret show is to be imported from London on those

occasions. The new company is to be congratulated on attempting to make a success of the place, which is already getting back the camaraderie of the old days.—G. D.

Cheap Air Fares to Paris.

During the Paris Aero Show, to be held between Dec. 3 and 19 inclusive, Imperial Airways Ltd. have decided to issue special rebate tickets to Paris at £8 return, to officials of the Air Ministry, members of the Aircraft Industry, and serving Officers of the Royal Air Force.

There is a daily service to Paris which leaves Croydon Aerodrome at 12.00, arriving at Le Bourget Aerodrome at approximately 2.30 p.m. Cars in connection with this service leave "Airways House," Charles Street, Lower Regent Street, S.W.1, at 11.00.

Seats must be booked in advance and applications in writing should be made direct to the Company at Croydon Aerodrome.

Aerial Triptyques.

Customs Passes, serving the same purpose as motor-car triptyques, but without the triptyques' chief disadvantage, have recently been introduced by the Royal Aero Club for the benefit of British aviators abroad and private owners of aircraft touring the Continent.

With motor-car triptyques, a substantial sum of money has to be deposited as security before the car can leave its own country, but these Customs Passes for aircraft, known as "*Carnets de Passage en Douanes*," save the aerial tourist all this inconvenience. A "Carnet," procurable from the Royal Aero Club at a cost of only £1 11s. 6d., serves as a Customs pass on foreign aerodromes, and relieves the holder of all troublesome formalities, including the necessity for making a cash deposit, as has been required hitherto.

The "carnet" is in the form of a paper-covered book with detachable sheets and counterfoils, and is applicable to balloons, aeroplanes, seaplanes, amphibians and helicopters. It is officially recognised by Great Britain, Belgium, France, Italy, Holland, Roumania and Switzerland, and carries the guarantee of the Aero Clubs of 25 nations.

A number of British private owners and taxi-pilots, including all the pilots of Mr. Lowenstein's private air fleet, have been using these carnets for some time past and one of the latest applicants was Flt. Lt. Chick, who intends touring the South of France during his honeymoon in the Blackburn Bluebird.

Aviation in Kenya.

The Daily Express correspondent in Nairobi states:—

Lord Carbery, who now lives in Kenya Colony as a coffee planter under the name of Mr. John Evans Carbery, introduced the first private airplane into Kenya to-day. He arrived in Nairobi after flying from Nyeri by way of the Rift Valley, a distance of 200 miles, in two hours.

John Evans-Freke, tenth Baron Carbery, flew a little before the War 1914-18. He joined the R.N.A.S. early in the War, but broke an ankle while in Belgium, and did not fly again on active service. He must have taken up aviation again recently.

A Visit to Hamble.

Certain matters entirely disconnected with the doings of A. V. Roe and Co. Ltd. having drawn one to Southampton recently, the opportunity of calling upon A. V. Roe and Co. Ltd. at Hamble was seized. The Hamble works were found, as usual, full of interesting things, most of which unfortunately it is forbidden publicly to discuss.

Among those items which presumably may be mentioned with impunity the most prominent was the well-known Aldershot which was used as a flying test bed for the Napier Cub. This is now being fitted with another new engine of very high power in order that the engine may be given preliminary flying tests.

The Avian, of Lympe fame, now equipped with wings of considerably reduced span, is another item of interest. It appears that Mr. A. V. Roe has recently received a refresher course of dual instruction on this machine at the hands of Mr. Bert Hinkler. It is not however his attention to adopt this Avian as his private runabout.

This machine will probably pass into the possession of Mr. Hinkler, and Mr. Roe presumably will wait until an Avian with an Avro engine is ready.

Another interesting machine is a Lynx-engined 504 type fuselage and undercarriage fitted with a set of thick symmetrical biplane wings of the R.A.F. 30 type. It is said

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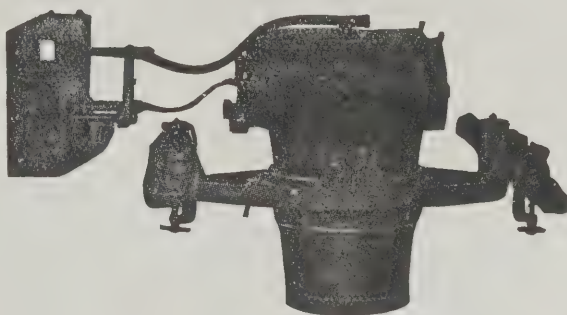
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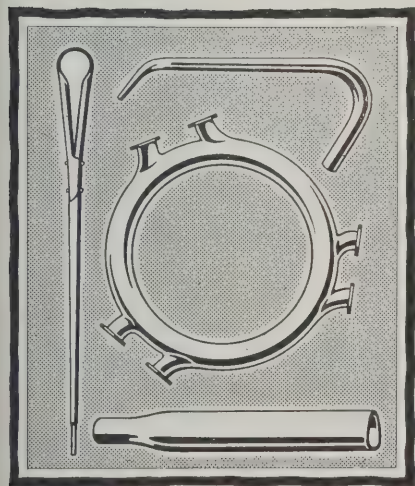
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that this machine has been found abnormally easy and comfortable to fly, particularly in bumpy weather. This is presumably due to the fact that as the wings have a stationary C.P. bumps produce no pitching, but merely cause the machine to rise and fall bodily.

A two-seater Auto-Giro with a Viper engine is being erected and should be ready for flying shortly.

There are numerous other aircraft of interest to be seen, but these are unmentionable. It is however permissible to say that Hamble is now equipped for the production of all-metal aircraft, and that some very interesting examples of both H.T. steel and of light alloy construction are now being produced.

PERSONAL NOTICES.

DEATH.

MICHELLE.—Killed in aeroplane accident in London, on Nov. 22, John Stuart Merson, eldest son of J. M. Michie, 3, Marchmont Street, Edinburgh.

MARRIAGES.

CAREY-WAKELEY.—On Nov. 25, at Jevington, Sussex, Flt. Lt. Denis H. Carey, R.A.F., only son of Capt. Walter Carey, C.B.E., R.N., and Mrs. Carey, of Melrose, Winchester, to Ferelyth, elder daughter of Mr. and Mrs. Seymour Wakeley, The Limes, Rainham, Kent.

CHICK-CHARRINGTON.—On Nov. 25, at Felixstowe, Flt. Lt. John Stanley Chick, M.C., A.F.C., R.A.F., and Florence Doreen, daughter of Mr. F. Charrington, of Felixstowe.

FAIRWEATHER-SWEENEY.—On Nov. 23, at the First Presbyterian Church, Londonderry, Flt. Lt. James MacGregor Fairweather, D.F.C., R.A.F., elder son of A. M. Fairweather and the late Mrs. Fairweather, of Queenstown, S. Africa, and Kathleen Isobel Sweeney, elder daughter of the late T. C. Sweeney and Mrs. Sweeney, of Londonderry.

ROSLING-ALEXANDER.—On Nov. 18, in London, Edward Geoffrey Rosling, late R.A.F., son of Mr. Percy Rosling, of Shortlands, Kent, to Genesta Victoria Alexander, youngest daughter of the late Capt. Ranald Alexander (Black Watch) and Mrs. Alexander, of Ryde, Isle of Wight, and granddaughter of the late General Sir James Alexander, C.B., of Westerton, N.B.

FORTHCOMING MARRIAGES.

CHISMAN-HARRIS.—The engagement is announced between Mr. L. de Ville Chisman, Flg. Off., R.A.F., son of Eng. Rear-Admiral and Mrs. Chisman, of Brockenhurst, and Rosamund, daughter of Lieut.-Cdr. Harris, O.B.E., R.N.R., and Mrs. Harris, of Lymington.

BIRTHS

BETT.—On Nov. 25, at Farm Hall, Godmanchester, the wife of P. J. Bett, R.A.F.—a son.

CORYTON.—On Nov. 28, at Castle Malwood, New Forest, to Philippa (née Hanbury), wife of Sq. Ldr. W. A. Coryton, M.V.O., D.F.C.—a daughter.

McCLOUGHRY.—On Nov. 24, at Shrublands, Sydenham Avenue, Croydon, to Freda, the wife of Flt. Lt. E. J. Kingston McCoughry, D.S.O., D.F.C., R.A.F.—a daughter.

RUSSELL.—On Nov. 22, 1926, at Littleton, Winchester, the wife of Flt. Lt. Arthur L. Russell—a daughter.

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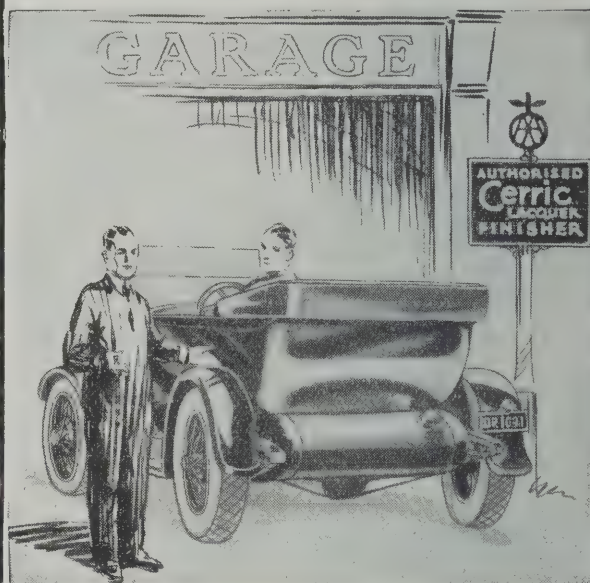
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THE AEROPLANE—DEC. 8. 1925.

THE PARIS AERO SHOW.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

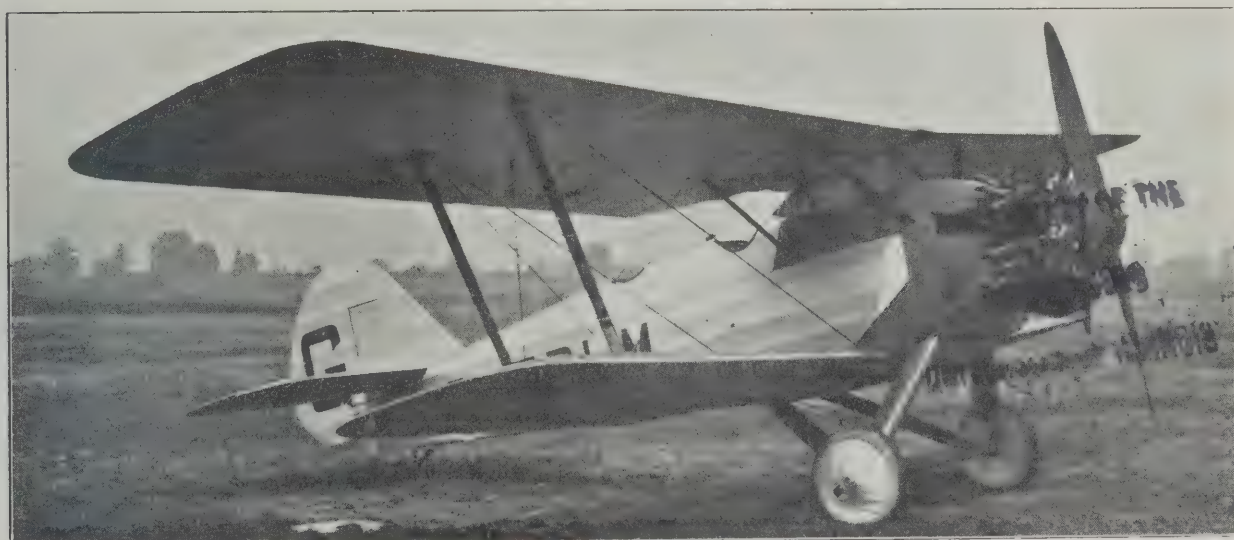
Edited by
C. G. GREGG

Vol. XXXI. No. 23.

SIXPENCE WEEKLY.

[Registered at the G.P.O.
as a Newspaper.]

THE BRITISH REPRESENTATIVE.



OUR CHALLENGER:—The Armstrong-Whitworth Ajax (Jaguar engine), the only British aeroplane in the Paris Show. The machine is being sold to foreign powers as the Ajax, presumably as defying the lightning of other air forces, but for home consumption it is called the Atlas, probably because it bears the burden of the Military world, as the new Army Co-operation type.

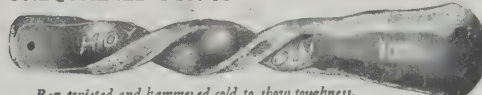
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TRAINING MACHINES.

Ever since Colonel Smith-Barry demonstrated so conclusively with the Avro 504J. that not only was the Avro a wonderful training machine, but that it was possible to train pupils to such a degree of proficiency that they could immediately transfer to fast single-seaters without intermediate training on "step-up" types, the Avro has been acknowledged to be the ideal military training machine.

Perhaps no one type of aeroplane has been fitted with so many different engines as the Avro, but all the experience gained in this way has led to one conclusion—if the qualities essential for military training are to be retained, only radial or rotary engines are useful. The requirements for a training machine are somewhat peculiar. If a pilot competent to fly fast scouts is to be produced, he must be trained on a machine which has the flying characteristics of a fast scout. Experience with the Avro has shown that only rotary or radial engines permit the close approximation of the centres of gravity and pressure which alone can produce many of these essential qualities.

Both of the latest Avro training machines are therefore fitted with engines of these types. The "Gosport" (how apt is the name!) is intended for military training, and is fitted with the new Monosoupape engine, and the 504N. with the Armstrong-Siddeley Lynx is for naval training and can be converted easily to take a twin-float undercarriage.

The Gosport is still at first sight the old familiar Avro, but at close quarters a number of modifications are visible. Perhaps the most important from a school flying point of view is the redesign of the centre section plane. The area has been reduced by cutting back the leading and trailing edges as far as the main spars, and the top main planes have been tapered at the root section. Both the Instructor and the pupil have a greatly improved view forward and overhead. The ailerons also have been altered. By a skilful redesign of the contour the "feel" of the lateral controls now corresponds perfectly with the elevators and rudder. Moreover, in a turn, there is appreciably less drag on the outside aileron than was the case with the old pattern. The

tail skid has been connected with the rudder controls so that the machine can be handled on the ground more easily.

Apart from these visible alterations, however, the machine has been very considerably lightened, but so carefully that although the weight has been reduced by about a hundred-weight, it is still as strong as a training machine should be.

The Gosport is even more easily manoeuvrable than the old 504K.—a sweeping statement to make, but true. Actual performance figures are not of great importance in training, but the following will be of interest:—

| | |
|---------------------|----------------------|
| Top speed | 87½ miles per hour. |
| Minimum speed | 35 miles per hour. |
| Climb | 670 feet per minute. |
| Range | 2 hours. |

For naval training the seaplane version is type 504O. and can be converted to a landplane (type 504N.).

The modified centre section plane and ailerons as described above are fitted, and in addition, tail trimming gear so that the incidence of the tail planes can be adjusted during flight. A feature of the sea undercarriage is the great strength of the floats, which are boat-built of a double mahogany skin on elm frames. The floats are of the single-step type with vee bottoms. No tail float is used.

The land machine has a special Oleo undercarriage.

This interchangeability from seaplane to landplane is a most important factor in naval training, and it can only be achieved by using an engine of relatively high power. Not only has the seaplane a good power reserve, but it is admirably suited for high altitude work, while the reserve of power on the landplane is such that the machine can be flown quite satisfactorily on one-third throttle.

The following are the performance figures:—

| | Seaplane. | Landplane. |
|-------------------|--------------|--------------|
| Top speed ... | 92 m.p.h. | 95 m.p.h. |
| Minimum speed ... | 42 m.p.h. | 40 m.p.h. |
| Climb ... | 600 ft./min. | 850 ft./min. |
| Range ... | 3 hours. | 3 hours. |



AVRO TRAINING SEAPLANE.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

A. V. ROE & CO. LIMITED,



MANCHESTER and SOUTHAMPTON.

"AVIAN"

THE MACHINE FOR THE PRIVATE OWNER.

Better Performance—Lower Cost than any other Light Aeroplane of similar power.

The Avro Avian is, above all, an efficient aeroplane. A feature which contributed towards the very considerable interest displayed in the Avian at the Light Aeroplane Competition at Lympne in 1926 was the extraordinarily large useful load which could be carried, and the remarkably high speed which could be attained while carrying this load.

It is essentially as a private owner's machine that the Avian has been standardised for production. Numerous modifications have been made in the design of the original competition machine which would not have been possible but for the fundamental excellence of the initial design, permitting the alteration of wing areas and the incorporation of numerous improvements to enhance the comfort and accessibility of the machine generally. Simplicity of design (so that an owner can maintain his machine and keep it air-worthy without possessing a great deal of skill or technical knowledge), accessibility of the power unit and all working parts, robustness of construction, reliability and comfort are the first requirements for the private owner's aeroplane. All these points have been foremost in the designer's mind. Add to all these the high speed, the long range and the large luggage capacity, all better than in any other light aeroplane, and the Avian is, without question, the only aeroplane for the airman who flies for his own pleasure.

The choice of two engines is offered—the Armstrong-Siddeley Genet as fitted to the competition machine, but with dual ignition, or the A.D.C. Cirrus Mark II, also with dual ignition. In both cases the method of installation permits easy access for examination and adjustments. The petrol system is direct gravity. The oil tank for the Genet engine is fitted to the side of the fuselage, where it forms part of the fairing. The oil for the Cirrus is contained in the engine sump.

A fireproof bulkhead separates the power unit from the front cockpit.

Complete dual controls are fitted. The control column in the front cockpit can be removed, and the rudder bar can be disconnected and used as a footrest for the passenger. Both cockpits are roomy and comfortable for long flights. The occupants are well protected from the wind.

The Avian is easy to fly. It has a good degree of positive stability. It is economical. It is safe. It is efficient.

This machine will shortly be marketed at a very attractive figure.

The following are the performance figures:—

Top Speed 105 m.p.h. Cruising Speed ... 90 m.p.h.
Landing Speed 40 m.p.h. Range 4 to 6 hours.



AVRO "AVIAN."

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE NAPIER LION.

The career of the Napier Lion has been particularly long and brilliant, and there are as yet, no signs of its glory fading. As a matter of fact the year 1926 has proved for the Napier Company—so far as actual achievements go—the most remarkable in the history of the engine.

It was in the year 1916 that this famous engine was first designed, although, owing to important Government work upon which the Company was engaged, it was not until 1918 that the first engine was actually produced. From the first it was seen that the Napier Lion was no ordinary aero-engine. Its power for weight, far exceeded any engine of that day.

Since those early days it has been improved and developed to such an extent that to-day it is regarded as the standard by which all aero-engines are judged. There is not another engine which has been used to such an extent in actual service—Royal Air Force, commercial and racing—as the Napier Lion.

The twelve cylinders of the Napier Lion are arranged fan-shape in three blocks of four cylinders each. This allows of a particularly short crankshaft, stiff and strong, reducing vibration, increasing reliability and lessening wear and tear.

The nominal horsepower is 450, but the service engine—5.8 to 1 compression—develops 502 horsepower at maximum permissible revs. This gives the engine the remarkable weight per horsepower of 1.89 lbs.

So consistent has been the success of the Napier Lion that it is now employed in twenty countries outside Great Britain, so that it can rightly be said that its success has reached every corner of the World where aviation is known.

Its popularity in the British Royal Air Force can be gauged by the fact that for the three long-distance Service flights carried out in 1926, Napier engines were selected.

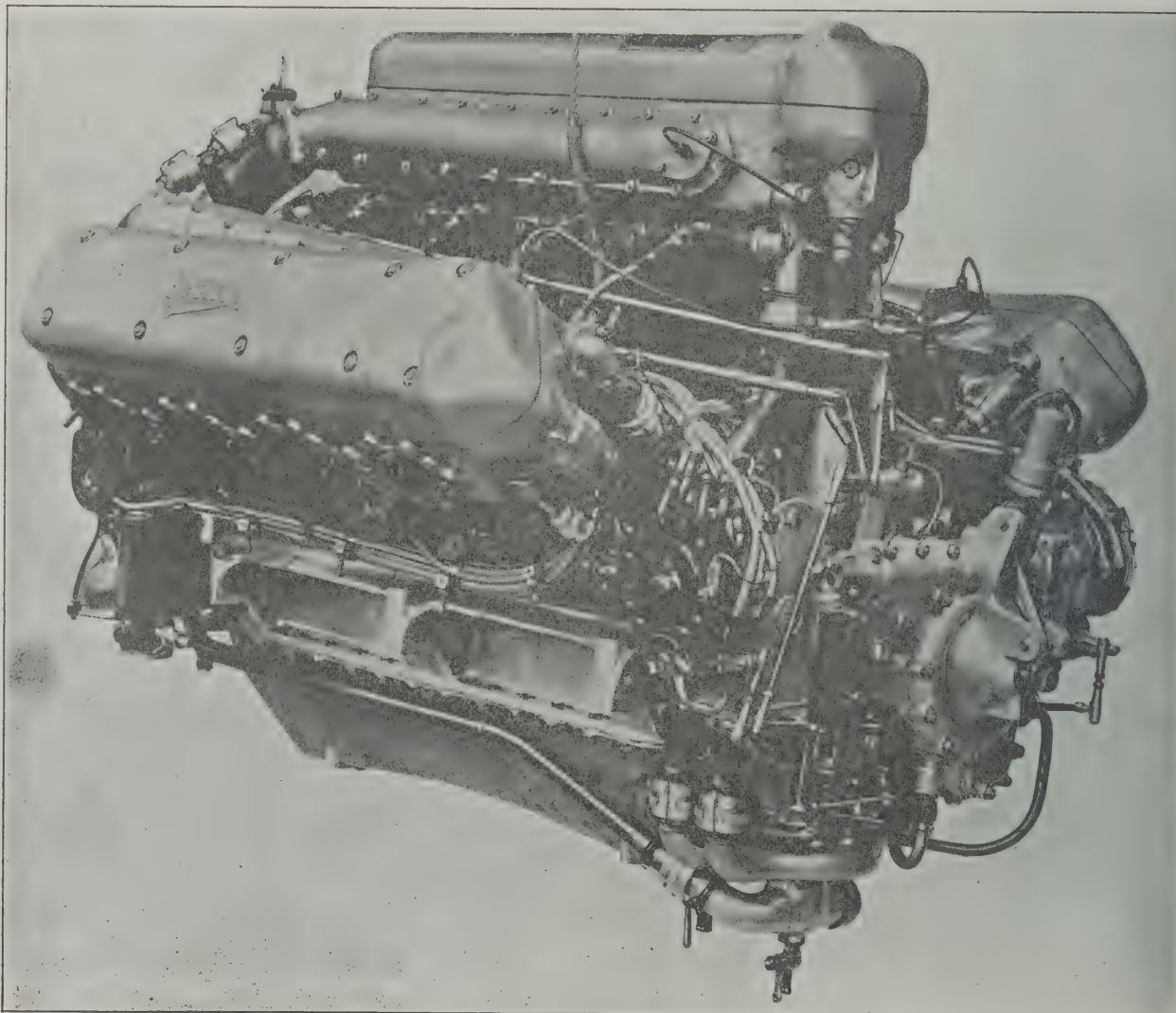
The first was by four Fairey machines, fitted with 450 h.p. Napier engines; these machines journeyed from Cairo to Cape Town and back to England without any mechanical trouble whatever, and the total engine mileage was 56,000. It was the first time that a flight of machines had essayed this difficult journey. Details of the flight, which makes interesting reading, have just been published by the Air Ministry. The flight kept to schedule time throughout and had no mechanical difficulty.

The second flight was that carried out by two Supermarine Southampton flying-boats, each fitted with two Napier Lion engines. These machines started from Plymouth and flew to Alexandria and back, a total engine mileage of 27,000. Again not the slightest trouble was experienced.

The third long-distance cruise was with two Vickers Victoria troop carriers from Cairo to Aden and back, a distance of 18,000 engine flying miles, and the same regularity of running in performance was achieved.

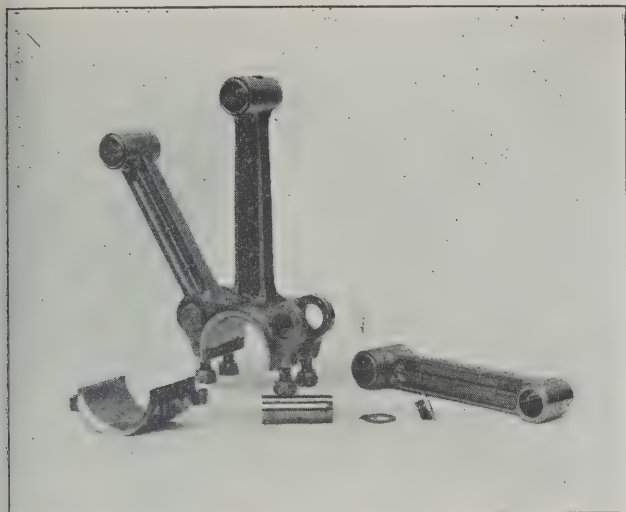
Another recent illustration of the great reliability of the Napier engine was the Seaplane Competition held in Germany. The purpose of this was to discover the best German commercial seaplane, and out of seventeen entrants, only three completed the strenuous trials. The Heinkel machine, awarded the first prize, was fitted with the only British Napier Lion engine in the competition.

Early in the year another remarkable performance was



THE POWER PLANT.—A three-quarter rear view of the Napier Lion engine. This power plant has been the mainstay of the British Air Lines since 1920.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



Connecting rods of the 450 h.p. Napier Lion engine.

achieved. Commandante Franco, the famous Spanish airman, flew a Dornier Wal machine, built in Italy and fitted with two Napier engines, from Spain to the Argentine, covering the distance of 6,259 miles in 59½ hours' flying time. This flight was accomplished by a series of long journeys and as Commandante Franco said on arrival at Buenos Aires "during the whole time the engines gave not the slightest trouble." On this flight the South Atlantic was for the first time crossed with a single machine, and a non-stop flight of 1,440 miles was made across the open sea.

In all these flights there was no question of special tuning of the engines for such strenuous journeys. In every case they were standard engines delivered in the usual way and taken from store for the particular flight. Such a series of "no trouble" flights with standard engines proves what a high standard of consistent reliability the Napier maintains.

On commercial service the Napier Lion engine has a wonder-

ful record. Imperial Airways have twenty engines in use. These engines have covered an aggregate of over 2,000,000 miles, and for the twelve months ending Sept. 30, 1926, a total mileage of 566,200 was flown.

Such a high standard of consistent efficiency as is obtained with the Napier Lion is not obtained by chance. The reason the Napier Lion predominates in the aero-engine world is because of the absolute thoroughness and care taken in its construction, from the time the rough material enters the Works at Acton to the time the complete engine is delivered to the user.

After every one of the thousands of operations that take place in the manufacture of the Napier Lion, it is inspected and checked by experienced men, so that as far as is humanly possible no defect can escape notice in any engine produced by the Napier factory.

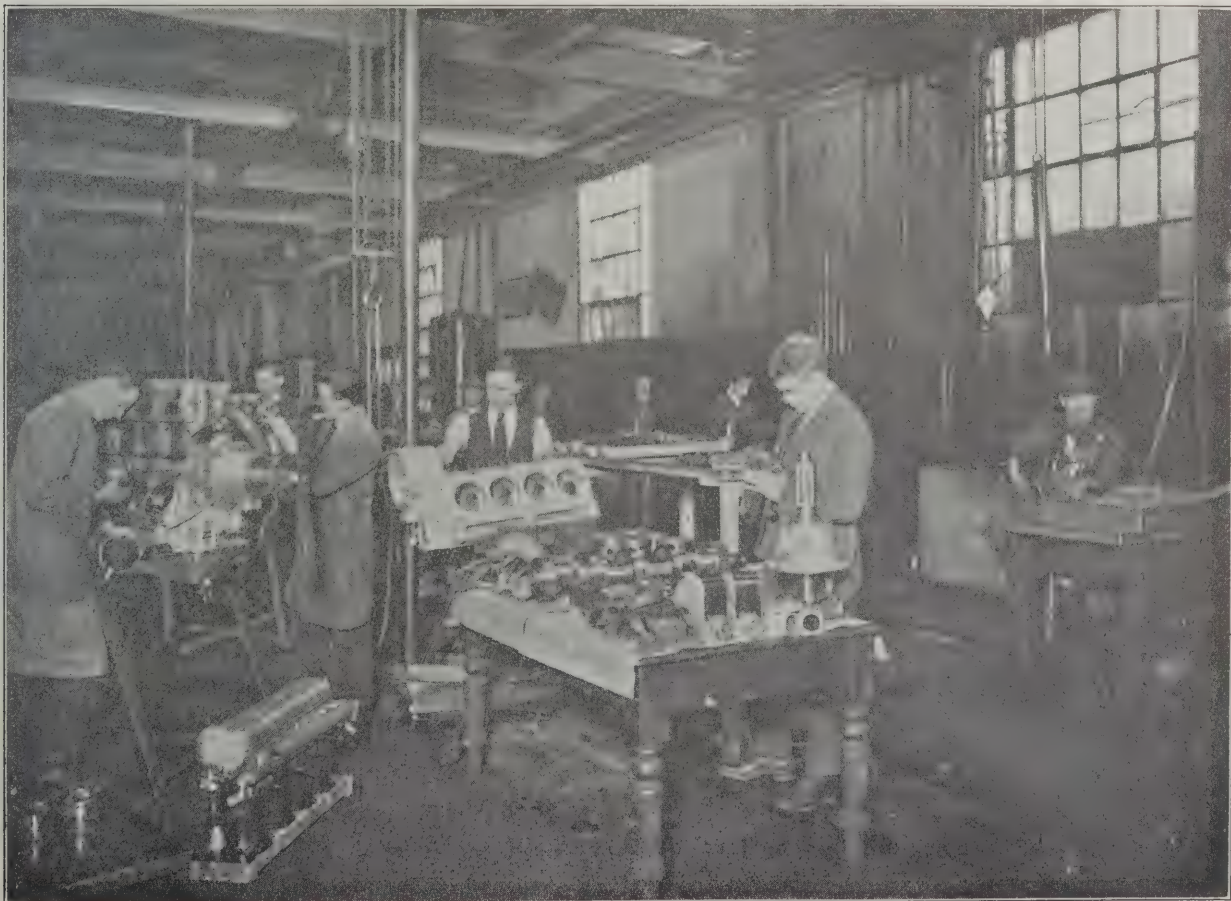
Even when the engine has been finally built and undergone a two-hour test, it is then taken down to the very last nut and bolt and thoroughly inspected to see how each part has withstood the strenuous running to which it has been subjected. The engine is then rebuilt for a final half-hour test before it is delivered.

Quite apart from the thorough inspection given by the Napier people, British Government officials supervise the assembly of each engine.

All through their century of existence, the Napier Company have been engaged upon engineering of the highest mechanical order, but there is nothing in their long career that they have reason to be more proud of than the production of this, the Napier Lion engine, which has done so much to bring British aviation to its present high position in the aeronautical world.

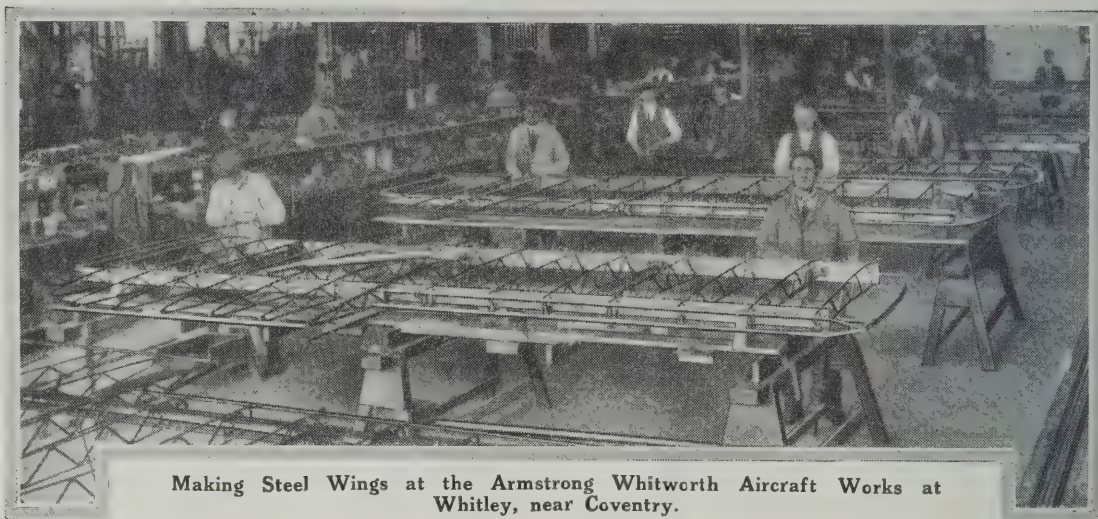
Below is given a brief specification of this engine:—

| | |
|--|---|
| Cylinders..... | 12 in three blocks of four each, one vertical, two at 60°. |
| Bore and stroke..... | 5½ ins. × 5½ ins. |
| Horse power..... | 450 at 2,000 r.p.m. (normal), b.h.p. at maximum permissible revs., 502, compression ratio 5.8 to 1. |
| Speed of airscrew shaft | 1,320 r.p.m. |
| Oil consumption (average) | 0.0235 lb. per b.h.p. hour. |
| Starter | Petrol priming system and hand-turning gear. |
| Weight of engine dry | 940 lb. (approx.) |
| Weight per horse power developed | Under 2 lbs. |
| Length overall to centre of airscrew boss .. | 4 ft 9 in. (approx.) |
| Height overall | 3 ft. (approx.) |



Napier Lion engines after test being completely stripped and inspected.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



Making Steel Wings at the Armstrong Whitworth Aircraft Works at Whitley, near Coventry.

The HOME of STEEL AIRCRAFT

Sir W. G.

ARMSTRONG WHITWORTH AIRCRAFT LIMITED.

The only makers in the world who produce Standardised Steel Aircraft in series.

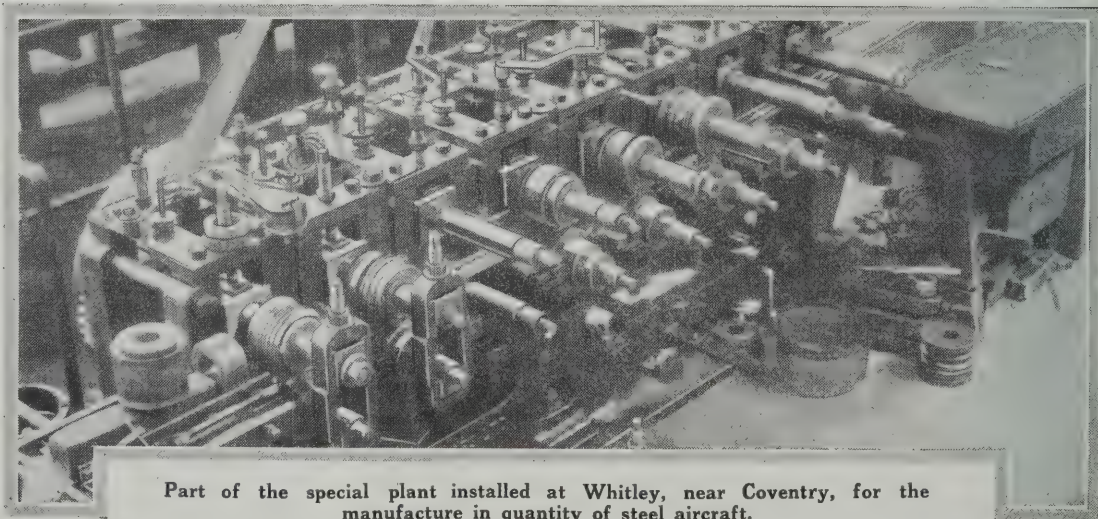
PARIS SHOW
Aircraft:

STAND
(Nave 4) **22**

THE Armstrong Whitworth steel aircraft experiments were started eight years ago, with the result that to-day the manufacture of standardised steel aircraft is an accomplished fact.

The Armstrong Whitworth organisation at Whitley includes an aerodrome and flying school.

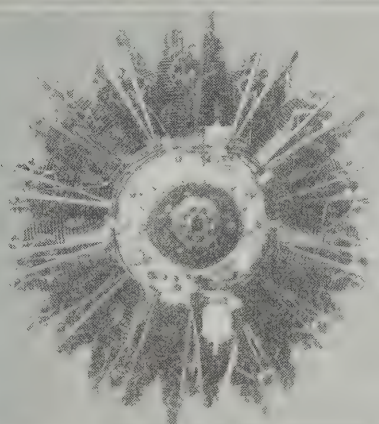
SIR W. G. ARMSTRONG WHITWORTH AIRCRAFT LIMITED
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)
Works and Aerodrome: Coventry. London: 10, Old Bond Street, W.1



Part of the special plant installed at Whitley, near Coventry, for the manufacture in quantity of steel aircraft.

A-14

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



The "JAGUAR,"
14 cyl., 385 h.p.



The "LYNX,"
7 cyl., 180 h.p.

SIR ALAN COBHAM
used the same
**ARMSTRONG
SIDDELEY**

AIR-COOLED ENGINE

on his England—Cape—England and
England—Australia—England Flights.

44,000 Miles.

SIR Alan Cobham's great flights proved that you cannot overheat, overcool, overload, or overdrive the infallible Armstrong Siddeley Aero Engines—the air-cooled engines that never fail.

Because they are air-cooled and so

eliminate all radiator and water circulation troubles, these infallible engines defy the extremes of heat and cold. They have been proved the simplest, safest and most economical aero engines in the world.

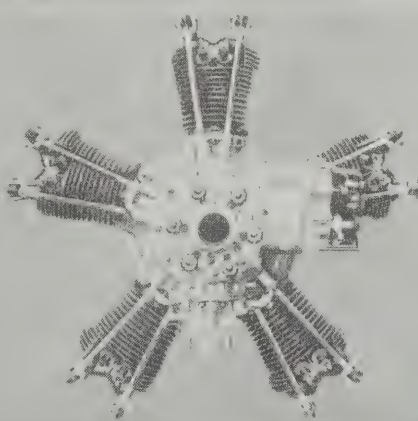
ARMSTRONG SIDDELEY MOTORS LIMITED
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)
Works and Aerodrome: Coventry. London: 10, Old Bond Street, W.1.

PARIS SHOW
Engines:

STAND 16
(Grand Nave)



The "MONGOOSE,"
5 cyl., 125 h.p.

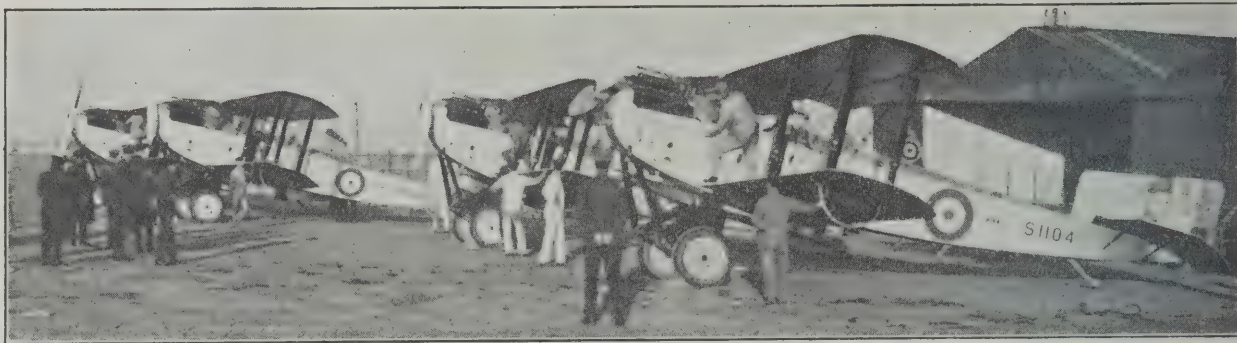


The "GENET,"
5 cyl., 65 h.p.

A-13.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE FAIREY TYPE IIID LAND OR SEAPLANE.



THE DEPARTURE.—The four Fairey IIIDs (Napier Lion engines) just before leaving Cairo for the Cape.

The Fairey Aviation Co. Ltd., of Hayes, Middlesex, have earned an enviable reputation as the designers and constructors of aeroplanes, seaplanes, flying-boats and amphibians of all types, but of the long series of notable types bearing their name, the Series III convertible land or seaplane is generally recognised as a machine of outstanding merit. First produced in 1916, this type, merely altered in the light of post-war experience and fitted with a Napier Lion engine, is still the standard three-seater Fleet reconnaissance seaplane of the Royal Air Force; the present Service version being known as the type IIID. R.A.F. Units equipped with this type are in operation in England, Malta, Hong Kong, etc., from shore stations or borne in aircraft carriers. Similarly, the Dutch East Indies Naval Air Service, the Portuguese Navy and the Swedish Navy possess numbers of Fairey IIIDs and the fact that the type is in such widespread operation under varied conditions of climate demonstrates the excellent all-round efficiency of the type.

Early in 1925 the Air Ministry inaugurated a policy of carrying out a number of long-distance flights within the Empire to investigate the possibilities of Empire communication and to demonstrate the mobility of the R.A.F.

One of the first big flights planned was one from Cairo to Cape Town and back to Cairo and then on to England. For this flight four Fairey Series IIID land and seaplanes fitted with 450 h.p. Napier Lion engines were chosen, to operate as land machines between Cairo—Cape Town—Cairo and as seaplanes between Cairo and England.

Wing Commander W. H. Pulford, O.B.E., A.F.C., R.A.F., was chosen as the Commander of the flight, the other personnel being Flt. Lts. E. C. Emmett, M.C., D.F.C., W. E. Reason, P. H. Mackworth, D.F.C., E. J. L. Hope, A.F.C., Flt. Offs. A. A. Jones, W. L. Payne, Serjt.-Fitter Hartley and Serjt.-Rigger Gardiner, R.A.F.

This flight left Cairo on Mar. 1 and proceeded via Aswan, Atbara, Khartoum, Malakal, Mongala, Kisumu, Tabora, Ndola, Broken Hill, Livingstone, Bulawayo, Palapye Roed, Pretoria, Johannesburg, Bloemfontein, Beaufort West to Cape Town, arriving at the latter place on April 12. The flight operated throughout as a complete unit of four machines.

On their arrival at Cape Town the Secretary of State for Air sent the following telegram to Wing Commander Pulford:—

I congratulate you and those under your command on a most meritorious achievement. The arrival of four Service machines from Cairo marks a real advance on previous flights by single aircraft. I wish you all success on the return journey. The completion of your flight will be a convincing demonstration of the increasing mobility of the Air Force and the great potentialities on Imperial Defence of which, with adequate organisation, this mobility gives promise.

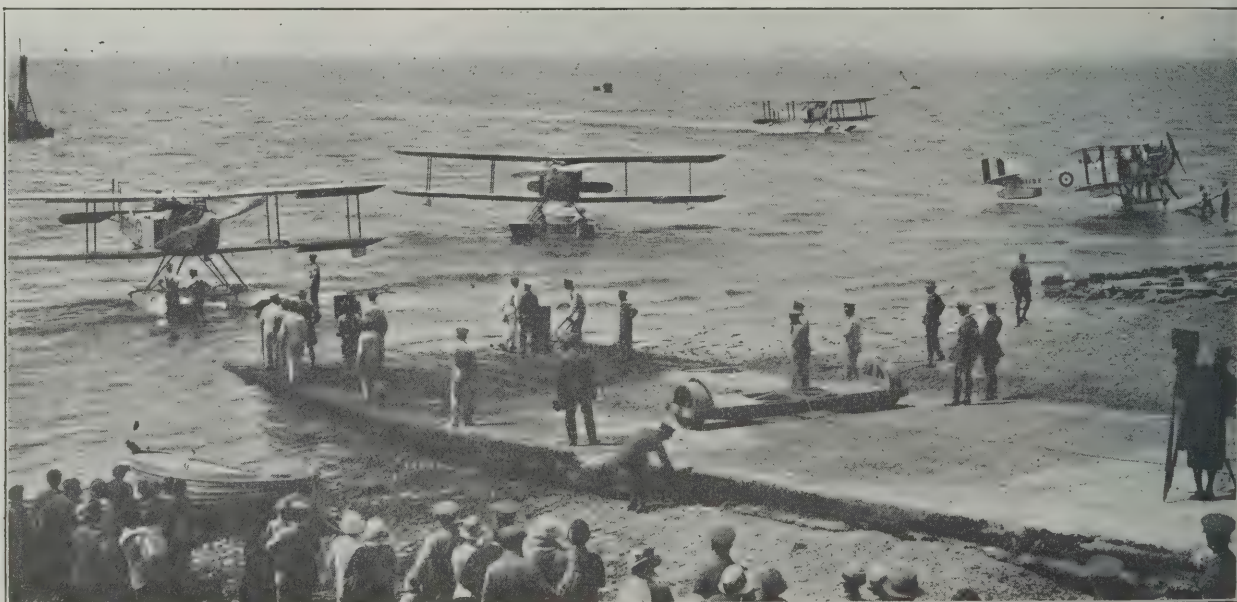
On April 19 the flight left Cape Town on its return flight and on May 27 it arrived back at Cairo according to schedule. On May 29 the four machines flew to Aboukir to have the land undercarriages replaced by float undercarriages.

On June 9 the four machines left Aboukir and flying by way of Sollum, Phaleron, Corfu, Malta, Marseilles, Bordeaux and Brest arrived at the R.A.F. station, Lee-on-Solent, on June 21. In the stage of the flight from Marseilles to Bordeaux the four seaplanes had to undertake an overland crossing of 310 miles in the course of which the only possible alighting places were small lakes or rivers from which it would have been practically impossible to take-off again even if a safe alighting had been made. On arrival at Lee-on-Solent Wing Commander Pulford received the following telegram from Sir Samuel Hoare:—

I heartily congratulate you and the personnel of the Cape Flight under your command on their arrival in this country. The successful accomplishment of this flight of 14,000 miles over land and sea without a hitch by four Service machines is a most creditable achievement, and the regularity with which you have been able throughout to adhere to your time-table is a striking testimony to the high standard of training of the Royal Air Force and the reliability of the Fairey machines and Napier engines employed. There could be no more convincing demonstration of the desired future of aviation as a mobile and economical instrument of Imperial Defence and as a reliable means of speeding up communications between this country and the Dominions.

Throughout the flight the machines and engines operated faultlessly. This is particularly noteworthy when it is considered that they operated under widely differing climatic conditions both as land machines and seaplanes.

Altogether the flight, which is still the longest Service cruise, was a triumph for Fairey aircraft.



THE ARRIVAL.—The four Fairey IIIDs (Napier Lion engines) arriving at Lee-on-Solent after flying from Cairo to Cape Town and back to England. For the last stage, from Cairo to Lee-on-Solent, they were used as seaplanes.

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1926.

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Aeronautical Engineering

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ON THE TENTH FRENCH AERO SHOW.

French Aviation is to be congratulated on the Tenth *Exposition de l'Aéronautique*. The exhibits in the Grand Palais show a very decided improvement on those of two years ago. The workmanship all round is very much better. The machines on the whole are much cleaner. And there is a distinct tendency to simplify construction.

Two years ago the Show was full of what can only be described as aluminium lacework. Designers seemed to be competing with one another in the production of complicated and intricate structures in duralumin, alferium and other substances of the aluminium alloy family. To-day, though the French constructor seems to be as fond as ever of what the late Walter Staner used to call "electrified dirt," which is quite natural considering that France contains large deposits of Bauxite and the biggest aluminium industry in the World, the Frenchman is at any rate using his aluminium products more sensibly.

Instead of bits and pieces of aluminium channels and Us, and Xs, and Ts, and Is, he is going more and more for straight aluminium tubes with their ends flattened, or trapped, or merely pushed into sockets, and held together by nuts and bolts instead of millions of rivets.

There is also a remarkable advance in French aero-engines. The amazing long-distance non-stop records put up by the Farman and Lorraine-Dietrich and Hispano-Suiza engines have proved that the French are again producing engines of the very first class.

A BRITISH SUCCESS.

At the same time, we in this country can pride ourselves on the fact that for all-round work the French Flying Ser-

vices, both Military and Naval, have pinned their faith to the Jupiter, which seems to have established itself more than ever as the World's premier high-powered radial engine. There are certainly more Jupiter engines in the Show, and in the new types for the French Services, than there are of any other make in the 400 h.p.-500 h.p. class. The Bristol Aeroplane Company deserve the thanks of the British Aircraft Industry for thus upholding the good name of British aeronautical engineering.

LA TRIOMPHE JUPITER.

The success of the Bristol Jupiter has evidently touched the French Aircraft Industry very much on the raw, for on Saturday, December 4, *La Liberté*, which claims to be "the most read of the journals of the evening," devoted its leading article to an attack on the dominance of the Jupiter under the heading "How England controls our Aviation," and referred to the position as "*La Scandale Jupiter*." The paper demands to know whether the French Government should systematically encourage an English make of engines, whether every English motor put into a French avion should pay a commission to England, whether the French Government should pay for each of these motors twice as much as any foreign Government pays, and whether the English firm on which France confers a monopoly should profit by it to carry on all over the World a violent campaign against the French Industry—and a few other rude questions.

Quite apart from the fact that anything which the Bristol Company draws in the way of royalties can only be a very small many-placed decimal of a percentage on the amount



A GENERAL VIEW OF THE SHOW.—In the foreground is an Avimeta float and beyond it the Avimeta (Schneider) alferium monoplane designed by Captain Lepère. Beside it, with military markings on dark wings, is M. Béchèreau's S.R.A.P. The small pale machine beyond that is the S.I.M.B. (Bernard), with the little Fiat in the centre, inside a stockade, and a Levasseur on the left. The Armstrong Ajax had not arrived.

of money which the French Government has never attempted to pay us in the way of War Debts, there is no doubt that the French technical people have deliberately fixed on the best engine that they could find as the result of exhaustive tests, and have had it made by the Gnome and Le Rhône firm, of which the Gnome section was responsible for the fact that the first French aeroplanes ever flew at all, and the Le Rhône section was responsible for the best rotary engines the World has ever seen. So if anybody ever deserved the support of the French Government it is the Gnome-Le Rhône Company.

However, M. Lazare Weiler, the internationally famous banker, who is, one believes, the controlling influence in the Gnome-Le Rhône Company, is probably perfectly well able to fight all the political influences which can be brought up against the Jupiter engine in France.

On the point of British Prestige one would like to draw attention to the fact that apart from the Bristol-built Jupiter Lucifer and Cherub engines, the only representative of the British Aircraft Industry in the Show is the Armstrong-Whitworth-Siddeley combination. The famous armament firm is to be congratulated on its energy and initiative in appearing at the Grand Palais.

Unfortunately the Armstrong-Whitworth Ajax two-seater was delayed for many days on the French railways, and did not arrive in time for the opening day. But the Armstrong-Siddeley Jaguar, Lynx, Mongoose and Genet engines made a brave show at the opening, in spite of circumstances which were overcome by the firm's personnel in a highly creditable manner, which will be related hereafter in its proper place in the description of the firm's exhibit.

There is also satisfaction in recording the fact that the Lorraine-Dietrich firm, the oldest motor firm in the World, shows what is distinctly a Jaguar-like engine. One does not pretend to know whether it has been built under license to the Armstrong-Siddeley firm. But one imagines that the Jaguar is pretty well protected by international patents, so perhaps we may have a "Scandale Jaguar" as well as a "Scandale Jupiter."

AERONAUTICAL TENDENCIES.

From the purely aerodynamic point of view there is no indication of any particular progress in the Show. As one has said, the aeroplanes are better aeroplanes, but there is nothing in the way of a novelty. Nevertheless, the Show does indicate certain distinct tendencies either among the French

designers or among the military and naval people on whom they, like our own Aircraft Industry, depend for their livelihood.

The most noticeable tendency is in the direction of parasol monoplanes. This, after all, was rather the natural outcome of the *sesquiplan*, or the biplane with the short lower plane, which appeared in numbers at the Show of two years ago. These parasol machines now range all the way from vast reconnaissance and bombing machines, such as the Breguet and Potez, in both of which the lower plane hardly counts, and the Mureaux and the Avimeta, without any lower plane at all, right away down to the little "Type Jockey" Nieuport single-seat fighter.

The parasol certainly has the advantage, as a war machine, of giving an absolutely unrestricted view downwards. And with the wing properly placed the pilot can see upwards under the leading edge and over the trailing edge, so that there are practically no blind spots. But one cannot believe that any parasol can be as manoeuvrable as either a low-wing monoplane or a short-span biplane. The main weights of the machine are slung underneath the centre of pressure, and so the pilot has to control a pendulum as well as the ordinary aerodynamic reactions.

Also one very much doubts whether the parasol can be made as aerodynamically efficient as either of the other types, if only because of the mass of struts and bracing which are necessary to hold a parasol wing to the fuselage.

The French designers seem to get their high performance out of the parasol by the most careful streamlining of their struts, and by cleaning up the outsides of their fuselages and cowls and tails till they are as free from parasites as a Schneider Trophy winner. When one compares even their big *grande reconnaissance* machines with most of our machines, with our external control wires and levers and bloaters, and even external gun-brackets and such things, one begins to see how the French get their performance. Nevertheless one believes that in a "dog-fight" a Grebe or a Woodcock or a Siskin would get round twice inside the minimum circle of most of the French high-speed fighters.

MILITARY EXIGENCIES.

This, of course, raises the ever-debatable question of whether one prefers manoeuvrability to pure speed and climb. It is true that the highly manoeuvrable machine can get out of the way of the high-speed machine by dodging, and that if the speed machine does not score with its



ANOTHER GENERAL VIEW.—The machines in the foreground are Levassours, with the Villiers beyond them. That which is doing a nose-dive in the background is a Gourdou-Leseurre.

first shot it has to go away and begin all over again. But it is also true that the high speed machine can always attack when the pilot wants to attack and can get away by sheer speed if the pilot wants to get away, whereas the manoeuvrable machine, although it may dodge, cannot attack if the high-speed pilot does not want to fight and cannot get away without fighting, even though the fate of an army may depend on the pilot getting home with important information.

Consideration of the whole question, as raised by the French development of these new high-speed pursuit-ships, convinces one more and more of the rightness of one's belief that the true solution is the development of two distinct classes of machines, one the real pursuit-ship, purely for purposes of attack, and the other the highly manoeuvrable high-altitude fighter.

In fact one is a little bit doubtful whether the high altitude fighter is really of any particular use at all. It can only fight if somebody else goes up to 25,000 feet or so to fight it. There is very little use in having a speed of 150 m.p.h. at 25,000 feet, and perhaps 170 m.p.h. at 10,000 feet, if your enemy's machines are doing precious near 200 m.p.h. at 10,000 feet and never want to go near 20,000 feet.

Presumably the idea of the high altitude fighter, or interceptor as it is sometimes called, is to sit up high and intercept enemy bombing machines. But no enemy bomber is going to fly at much over 15,000 feet, except perhaps when going home in daylight after all its bombs have been dropped and most of its petrol has been used.

Also, according to the French view, nobody except a fool Englishman would ever want to go up to 25,000 feet to fight, where a man is too weak to work a joy-stick or open a throttle without being doped with oxygen. Therefore on the whole one believes in the high-speed pursuit-ship, such as the French and Americans are developing.

After that one wants to see a real high-speed single-seat scout, with a speed of at least 250 m.p.h., without any guns and carrying only an automatic camera. Such a machine will be absolutely necessary in the highly mechanised mobile war of the future in which quite big fighting forces may move 100 miles or so in a day, with the result that air scouts will have to go out 100 miles or more to discover the enemy's movements.

Such machines ought to be able to do the out-and-home trip in an hour, and return with photographic records, ready developed, of the enemy's troop movements. The French and the Americans, and the Italians by way of their Schneider Trophy machines, are well on the way towards such aircraft. We, on the other hand, are still somewhere about the mental attitude of 1923.

THEORY AND PRACTICE.

Another interesting point about the general tendency of French design is that they do not seem to be bothering themselves in the least about the long-range night-bomber type, of which we are so fond in this country. The French seem to intend to rely on their big single-engined two-seaters or three-seaters for *bombardement* and *grande reconnaissance* alike. Herein they show their wisdom.

For years one has preached the doctrine of "one man, one aeroplane, one bomb," where the use of really heavy bombs is necessary. Obviously it is foolish to go and put half-a-dozen big bombs into one machine with half-a-dozen or more men to protect them with machine guns, when one lucky shot by a daring single-seater, or by a well-trained anti-aircraft gun crew, would result in the loss of six men and six bombs, when for the same amount of money spent in aeroplanes and engines one could spread the men and the bombs over half-a-dozen different machines which would take just six times as much destroying.

Moreover it is particularly idiotic to put all those bombs and men into machines which have a cruising speed of about 75 m.p.h., so that if they happen to butt into a 40 m.p.h. head wind on their way to a target 150 or 200 miles distant, instead of reaching it at dawn, they will only reach it some time the next afternoon, even allowing that they are not already destroyed by defensive aircraft and guns soon after sunrise and about half-way to their objective.

Surely it would be far better to put the same number of men and the same weight of bombs into five or six times as many machines, each of which would have approximately double the speed of our night-bombers in still air and something between three and four times their speed against a head wind.

Also multiple-engined machines seem to be regarded as of little use, for if one engine goes dead they can neither get to their objective nor to get home. The best they can do is to reach a decent landing ground, and the logical Frenchman is not interested in bothering about that in time of war. His view is that it is better to crash a machine than waste engines.

THE FRENCH SCHEME.

That appears to be the line along which the French Service d'Aviation is working. Their *avions de bombardement* and *grande reconnaissance*, although they only carry a crew

of two, would be very nasty things to attack from the air. They all carry five or seven guns, namely twin guns in a turret aft, a single gun under the floor of that turret (*à la Gotha*) and either two or four fixed guns in front.

Machines of such size, big as they are, can fly in close formation and can simply blast their way through anything which attacks them in front and drive off anything which attacks from above or behind or below. And such machines are every bit as suitable for night bombing as for day bombing.

Personally one has never been able to fathom the mind or acquire the outlook of the people who committed the lunacy of first producing our night bomber types. The only thing for which one can imagine them to be of any use is bombing native tribes who have no way of hitting back. And for that job one might just as well use school Avros, which would be considerably cheaper.

ADVICE TO THE AIR STAFF.

The Royal Air Force undoubtedly has a very great deal to learn from the French *Service d'Aviation Militaire*. One strongly recommends that the Air Staff should make a close study of the French methods of training their pilots.

One does not mean such training as is done at our Flying Training Schools. Nothing could improve on that. We train our pilots, purely as pilots, better than any country in the World. We give them more actual flying than does any other country. And we undoubtedly have better material than any other nation from which to make pilots. That is precisely what is going to save us whenever we get let in for a war with a first-class Power. It is after leaving our training schools and joining squadrons that our system of training goes to pieces.

We shall never have to fight the French, and one never regards France as a possible hostile Power—in spite of the delightful articles of M. la Commandant le Pallonier in *L'Aero-Sports*. But when we go to fight Russia and/or Japan we shall find ourselves up against a certain number of extremely good pilots who have been trained on the French system. And then we shall lose quite a lot of good men simply because, although our people are certainly better pilots, as pilots, they do not get the actual shooting and bombing practice that they ought to have, judged, at any rate, by French standards.

While in Paris one had some very interesting conversations with people of various and assorted nationalities who know just about as much as there is to know of the French system. And one has been definitely convinced that the French method of getting pilots and machine gunners and bombers, and turning them out as first-class skilled men at their various jobs is quite a distance ahead of ours.

Therefore one strongly recommends the Air Staff to study the French system and introduce into our own system such modifications as are so evidently desirable, based on the initial fact that, though our pilots do far more flying than the French individually, their fighting and bombing training is nothing like so complete either in quality or quantity. We do not do enough of either and we do not do it in the right way. It is how the French are taught and what they are taught which we ought to copy.

The types of machines which are now being evolved in France are the result of all this practical experience which our people do not get. So our designers as well as our Air Staff people will do well to make a close study of everything which is to be seen at the Paris Show.

INTERNATIONALISM.

The Show certainly is international to a certain extent, as already indicated by references to the British exhibits, and it is typical of the peculiarly topsy-turvy methods of aviation that the smallest manufacturing countries should be better represented than the bigger ones. The whole of the Czechoslovak Aircraft Industry is represented and make a very brave show. The Aero, the Letov (or Smolik) and the Avia (late Milos Bondy and now predominantly Skoda) are there, all with machines which compare well with anything in the Show. The Walter engines are on view,—their engines for small aeroplanes are particularly tempting. Also Breitfeld and Danek show some good work in bigger stuff.

Holland is represented thoroughly adequately by the Fokker Company with a striking three-engined passenger machine for the Lowenstein Navy, and a very nice two-seat fighter, and by our old friend Mr. Frederick Koolhoven, exhibiting under his own name and not under that of any firm, who shows a two-seat fighter with a Bristol Jupiter engine, which, like all his war machines, is a singularly truculent looking weapon.

The highly successful Italian Aircraft Industry is represented by one very pretty little Fiat biplane and the magnificent Fiat and Isotta-Fraschini engines.

But there is not a single American aeroplane or engine in the Show, and the Germans are absent because of the regulations about the Show being confined to members of the League of Nations, though a couple of Mercedes engines are shown on the Marabini stand.

So far as Civil Aviation is concerned there is nothing very exciting to be seen. The three-engined Fokker is certainly

the best thing in the show in this direction, and the single-engined Farman Jabiru, nicknamed the *ventre-à-terre*, is about the next best. But the design of the majority of the French civil machines seems to be governed by their adaptability to war purposes.

Either they seem to have been modified from the designs of existing war machines or they seem to have been designed so that they can be turned into bombers if necessary. The only one which seems to offer special attractions to air tourists is the Levasseur limousine, which at any rate has nice big windows through which to behold the passing panorama.

THE BEST THING IN THE SHOW.

Readers of these notes who are going to the Show during the following week should on no account miss the exhibits which are stowed away in the gallery at the back of the restaurant, directly facing the entrance. Unless one goes specially to look for it this section can quite easily be missed, and it is really about the best thing in the Show.

The most important part of it consists of a demonstration of what French Civil Aviation is doing. There are wonderful illuminated scenic models of the country over which the different lines fly. There are revolving diagrams of the distances covered by different means of transport in the same time, which light up photographs of the beauty spots to be reached in each instance. There are gorgeous aerial photographs of the places served by the various air lines. And there are all kinds of attractive and convincing arguments in favour of Civil Aviation.

One only hopes that members of our Department of Civil Aviation and of the publicity staff of Imperial Airways will go and study this particular exhibit.

Another fascinating section demonstrates how Breguet machines are built, all the way from the great aluminium works in the South of France right up to the mass-assembly of Breguet machines on the "belt" system, all shown in models and not in photographs.

Then there is another section composed of models of all the notable French aeroplanes beginning with the Santos Dumont tail-first machine and the Voisin box-kite and the Antoinette monoplane and the Breguet "coffee-pot" up to the very latest things in passenger machines and fighters. It is a whole history of French aircraft in its most easily understood form.

If only the Air League had the enterprise, and could get

the backing of the Aircraft Industry, it could do quite a lot in the way of making this country air-minded by organising an exhibition of precisely this kind, and housing it in one of the better-known galleries, such as are commonly devoted to the pictures of so-called Old Masters or modern iconoclasts. And after a stay in London it could tour the Provinces. In fact it would pay our Aircraft Industry to organise such a show on its own account.

SOMETHING TO COPY.

The Exhibition as a whole is arranged on the principle of uniformity, so that every firm has similar signs and there is no competition in meretricious decoration of stands and multiplication of glaring lights such as that with which the Motor Trade worries visitors to the Motor Show at Olympia, under the misguided impression that such elaboration attracts customers to the stands.

At the Grand Palais, when one wants to find a certain stand, one merely looks up at the signs suspended from the roof and one is able to discover the firm one wants without delay or annoyance.

This year the unsightly glass and ironwork of the roof is hidden by a most ingenious ceiling cloth which looks like a transparent marble tessellated pavement. It has worried the unfortunate photographers horribly but it is certainly pleasing to those who are not concerned with actinicity.

The French certainly do know how to arrange a show of this kind and if ever we rise to the dignity of having an Aero Show in England one only hopes that the organisers of it will copy the French show as closely as possible. We need not make our show as pretty, but we can certainly make it as practical.

Once again one congratulates French Aviation on its Tenth *Exposition Aéronautique*. It is a splendid example of that practical side of the French character which has pulled the French nation through so many difficulties ever since the Nordic Franks came into Gaul and made a nation out of an amorphous mixture of Celts and Mediterraneans. It is another example of that French quality of which Kipling has written:—

"Furious in luxury, merciless in toil,
"Terrible with strength renewed from a tireless soil;
"Strictest judge of her own worth, gentlest of man's mind,
"First to face the Truth and last to leave old Truths behind."

Mes felicitations, Messieurs les organisateurs.—C. G. G.

A REVIEW OF THE PARIS SHOW.

AERO.

The Aero Works of Prague show their type 11—a neat two-seater reconnaissance machine fitted with the Breitfeld Danek six-cylinder water-cooled "Perun II" engine of 240 h.p. This has N interplane struts, with cable bracing and an extreme depth of body aft which is relied upon in place of a fin.

The rear seat is fitted with a gun-ring which at first sight would be taken for a Scarff ring. Closer inspection shows that although similar in essentials it is of somewhat different design in detail, and should be very appreciably lighter. Like the other Czecho-Slovakian types it is a very business-like looking machine.

ARMSTRONG-WHITWORTH.

The two-seater high-performance fighter reconnaissance machine fitted with the Armstrong-Siddeley Jaguar of 385/400 h.p. known as the Ajax may be considered as a two-seater development of the well-known Siskin type, and has the same large top, and smaller bottom, wing with outwardly-raked interplane struts.

The machine is fitted with a steel fuselage of the standard Armstrong-Whitworth type, and wings may be either of the all-steel or of normal timber structure.

The pilot sits behind the wing with his eye level with the top centre section, and, thanks to the small chord of the lower wing his view in all the more important directions is exceptionally good. The observer behind him can see everything that the pilot cannot see, and has a thoroughly good field of fire.

The overall dimensions of the Ajax are remarkably small for a two-seater type, and very particularly so when compared to the average French two-seater reconnaissance machine of about 400 h.p. As a result the machine has remarkable manoeuvrability. It has in addition very ample control surfaces, carefully proportioned, and full control is attained right down to, and even past, the stall.

The Jaguar engine is entirely uncowed, and consequently very accessible.

An oleo shock absorber is fitted to the undercarriage, which will withstand the most severe type of landing without undue stresses being transmitted to the fuselage.



ALPHABETICALLY FIRST.—The Aero 11 (Walter Perun II 240 h.p.). A good Czecho-Slovak machine.

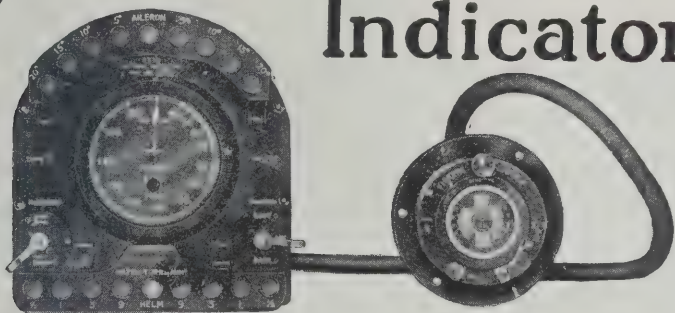
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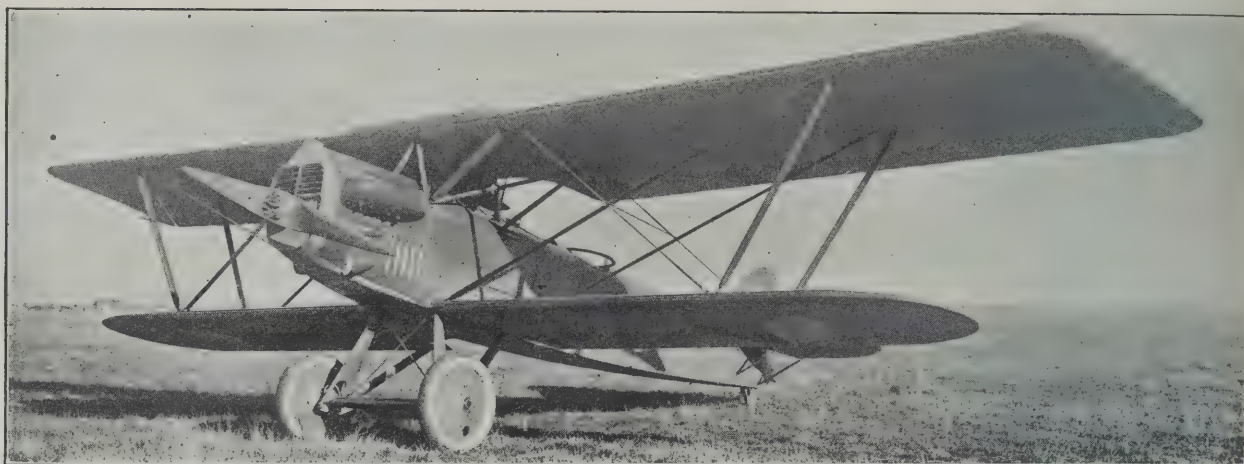


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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



A POWERFUL CZECH.—The Aero 30 (Lorraine-Dietrich 450 h.p.)

The standard machine has a remarkably good top speed at high altitudes and an excellent climb.

If performance at heights is specially required the super-charged Jaguar may be fitted in place of the normal engine. Figures for performance when so fitted are not available, but must be very markedly better than those given for the standard engine.

The total disposable load capacity of this machine is approximately 1,440 lbs. Of this 550 lbs. is normally used for fuel, giving a range of 500 miles at cruising speed. About 260 lbs. extra load may be carried in emergencies, so that despite the small dimensions of the Ajax its load capacity is extraordinarily good.

AVIA.

The Avia B.H.11.

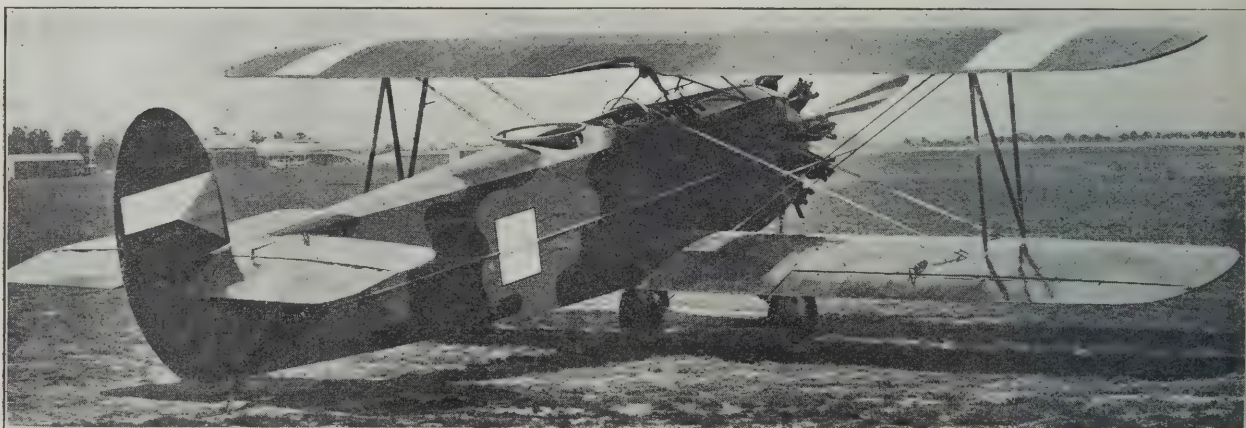
This little machine which has earned for itself so excellent a reputation all over Europe is certainly the most satisfac-

tory-looking low-powered two-seater of the private owner's type that one has yet met out of England. As is well known, it is a low-wing strut-braced monoplane—very like a large D.H.53—fitted with a 60 h.p. five-cylinder Walter radial. The machine exhibited appears to be a normal production model—that is it has not the "Show finish" of the majority of the French exhibits, but that, if anything, rather enhances the impression that here is a sound and robust machine made for service rather than for parade.

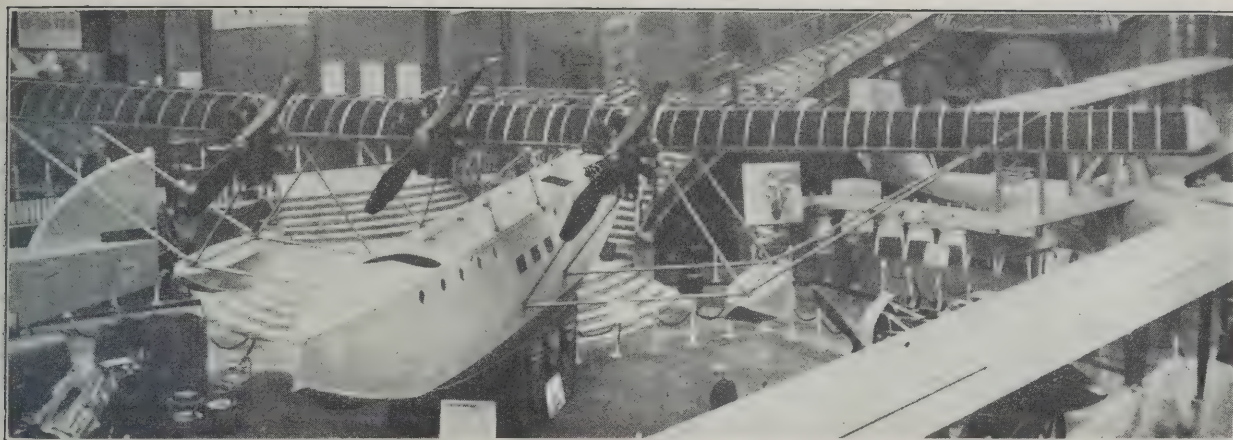
The B.H.26.

A two-seater fighter or reconnaissance machine of the biplane type. It is fitted with a Jupiter engine, presumably of Czecho-Slovakian produce. The wings are fairly heavily staggered, have one N-type interplane strut per side, and stranded cable bracing.

Ailerons are fitted on the lower wings only and are fitted



TWO MORE CZECHS.—Above, the Avia B.H.26 (formerly Milos Bondy and now mostly Skoda) (Jupiter 420 h.p.) and below the Avia B.H.11 (Walter 60 h.p.)—both a credit to Messrs. Benes and Hajn.



THE FILING SYSTEM.—The amusing Besson boat with its elaborate but hardly possible wings.

with balancer planes carried above and ahead of the hinge exactly as in certain Avro machines.

Construction is of the normal timber-framed type with steel fittings. These latter are mostly of simple and robust type though more welding is used in their production than might be approved by our Air Ministry.

The machine has no fin—but a very deep body aft partly accounts for this, and the balanced rudder is of reasonable size. The tail as a whole looks on the small side to British eyes—but has not the air of total inadequacy of so many Continental tails.

AVIMETA.

Avimeta is the new name for the Aircraft Section of the great Schneider gun works, to which pertains M. Jacques Schneider, the donor of the Schneider Marine Trophy. The machine shown is the Type AVM. A.T.8 of the kind known as *grande reconnaissance*.

The designer is Captain Lepère, who is famous as having designed the Lepère Fighter while lent to the United States at the end of the War. This same Lepère Fighter held the World's Height Record for a number of years, though it was never put into production by the U.S. Army.

The AVM. A.T.8 (which has nothing to do with Air Vice-Marshals, but stands for Avion Metallique, or something of that sort) is another of the popular parasol monoplanes. But in this case Capt. Lepère has made one I-shaped strut on each side do for his wing bracing, and all the struts of the big undercarriage are inside massive metal streamline trousers so

that the whole thing is as free from resistance as may be. The engine is a 500 h.p. supercharged Hispano-Suiza with a Levasseur-Reed airscrew.

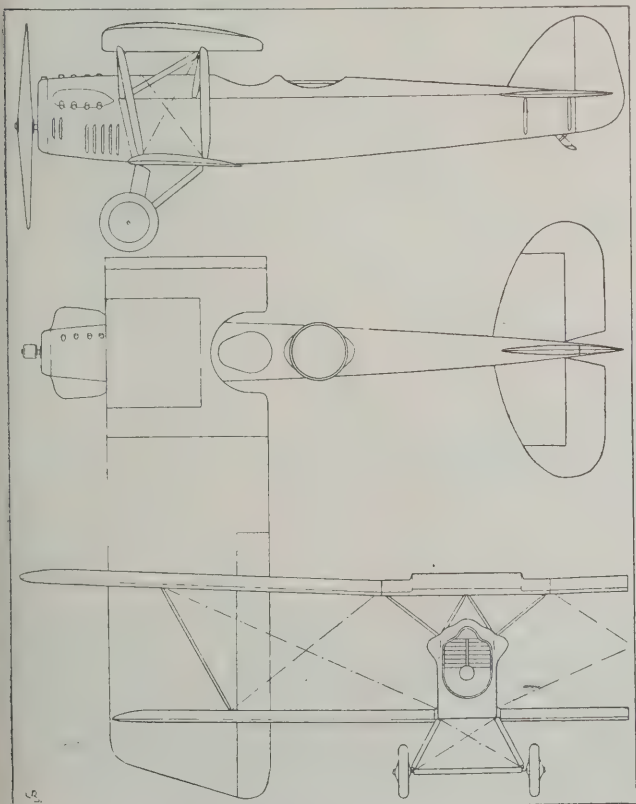
The whole machine is built of alferium which is an aluminium alloy of the duralumin family. The wing covering fuselage covering and the trousers of the undercarriage are all of sheet alferium which looks very neat.

The wings are of curious shape, having a very large chord although the main spars are quite close together. In the centre section the wing is cut away forward and aft of the spars so as to give the crew as good a view as possible. This cutting away cannot be good for the efficiency of the wings and it may have a curious effect on the tail surface if the machine gets into a spin.

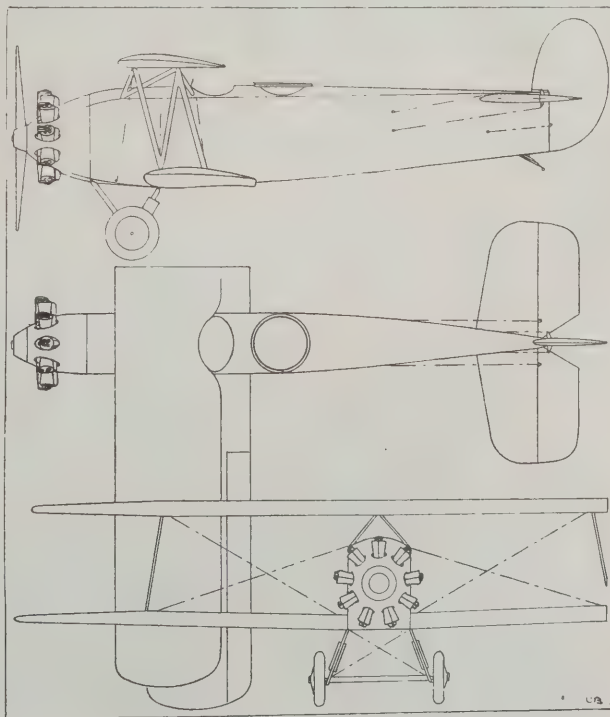
The fuselage is almost symmetrical in side elevation, with the result that the top of the fuselage curves downward to the tail just about as much as the bottom curves upwards. This, of course, brings the tail surface right into the slipstream of the airscrew, but it seems to put it in a bad position for the down current from the wings. It strikes one that the machine would be better with a flat back and a curved-up bottom.

Aerodynamically the machine is very reasonably clean, and apart from the fact that the rudder attached to the specimen at the show is of ridiculously inadequate area, should fly quite well.

On the same stand is an alferium float for a torpedo-carrying seaplane of large size. This is of the single-step Vee-bottomed type with flat tumble-home sides, and—like the machine above mentioned—is more noticeable for the excellence of the workmanship displayed than for any outstanding novelty in design.



General Arrangement of the Aero 30.



General Arrangement of the Avia B.H.26.



A BLERIOT PASSENGER-CARRIER.—The Blériot 165 (two Jupiters) to carry 16 passengers.

MARCEL BESSON.

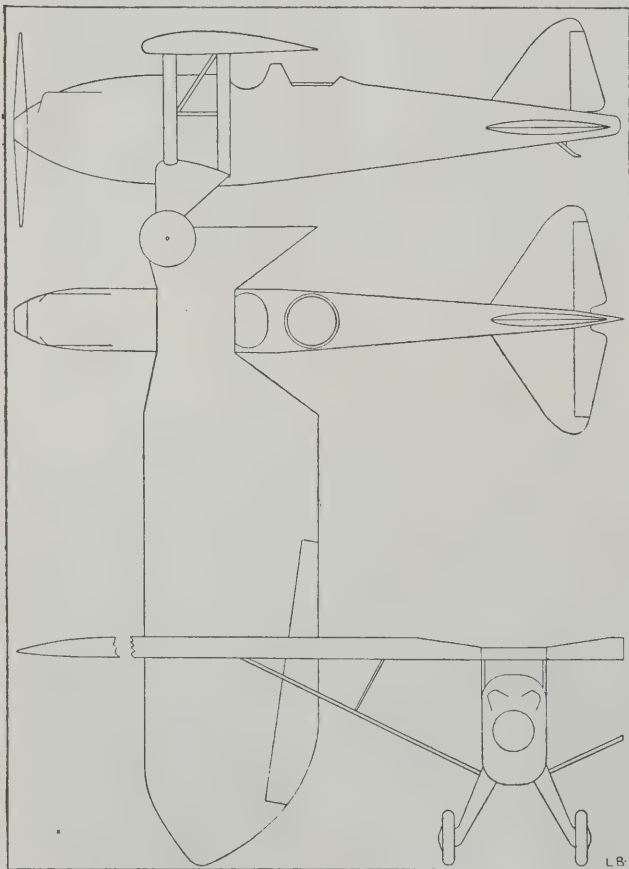
One cannot be quite sure whether M. Besson, who has been making flying-boats for years and years, intends his great three-engined exhibit to be taken seriously or not. The hull seems to be a seaworthy affair, though, not being a seafaring person, one's opinion on that point is worthless. But the wing-structure is either a joke or a tragedy.

The machine is a flying-boat with one enormous semi-cantilever wing high above the hull, and a couple of side-floats—in the place where wing-tip floats would be in a biplane—carried on a steel-tubular sub-structure. Three Jupiter engines are stuck out in front of the leading-edge of the wings.

The wing is shown in skeleton form, presumably because there was no time to cover it. One cannot imagine anyone exposing its design wilfully. It is built on three spars of ply-wood, the front one being about 3 ft. deep and about 2 in. thick. The ribs are very slim also. The whole thing is so unlike any known type, considered as an engineering structure, that one beholder of its masses of thin timber remarked that it looked more like an office filing system than an aeroplane wing.

The great Jupiter engines are carried on structures of thin steel tubing so fragile-looking that it seems that a single back-fire would certainly remove the whole edifice. One cannot believe that the machine will ever be asked to fly with such a wing. But if it should be asked to do so one can only foresee one of two results. Either the wing will fold up before it gets off the water, or it will do so immediately afterwards. The former would be preferable.

On the "Marine" stand, M. Besson shows a small tractor biplane, intended to fold up and go inside a submarine, to be produced and flown for scouting purposes as and when required. There is nothing new about the idea.



The Big Avimeta A.V.M.88.

It was invented by Mr. Pemberton-Billing, then Lieut. R.N.V.R., when he put forward to the Admiralty a perfectly workable scheme for bombing Berlin from the Baltic late in 1914 or early in 1915. Only the P.B. scheme was much better, for it included small flying-boats which folded much more neatly than does M. Besson's float biplanes. Unfortunately the P.B. scheme was stopped by the Admiralty, on the score of "humanity," or submarine aeroplanes would by now be standard equipment in every self-respecting Navy—if there be such a thing.

Anyhow, the U.S. Navy, which is surprisingly intelligent, for a Navy, experimented some years ago with a folding float-biplane which stowed in a submarine. It was successful so far as it went, but one has not heard of any recent developments.

BLERIOT AERONAUTIQUE.

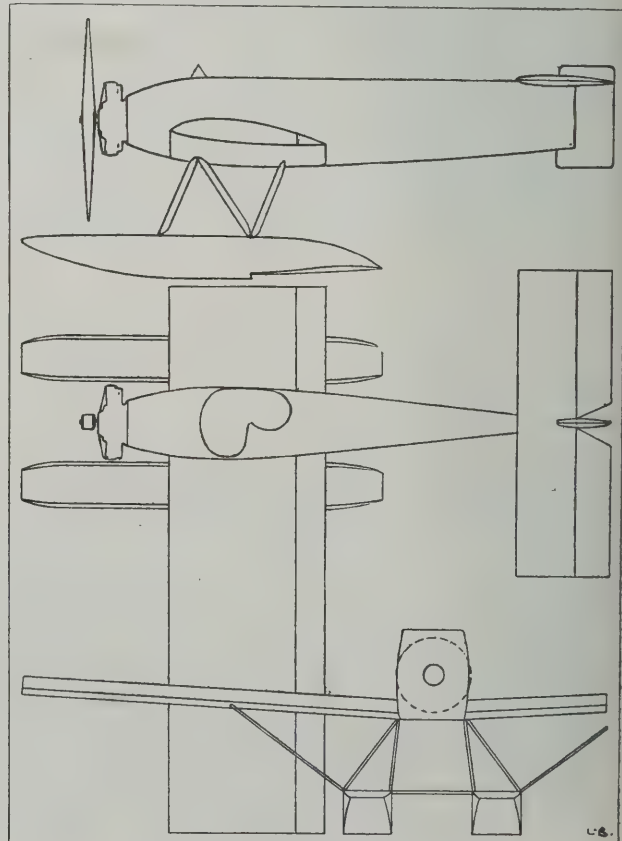
The Spad 61.

This—at present the holder of the World's Height record—is a high-altitude fighter fitted with 480 h.p. Lorraine-Dietrich engine and a Rateau supercharger. In general form it is very like previous Spad single-seaters, but has not the back-swept upper wing which used to mark these designs.

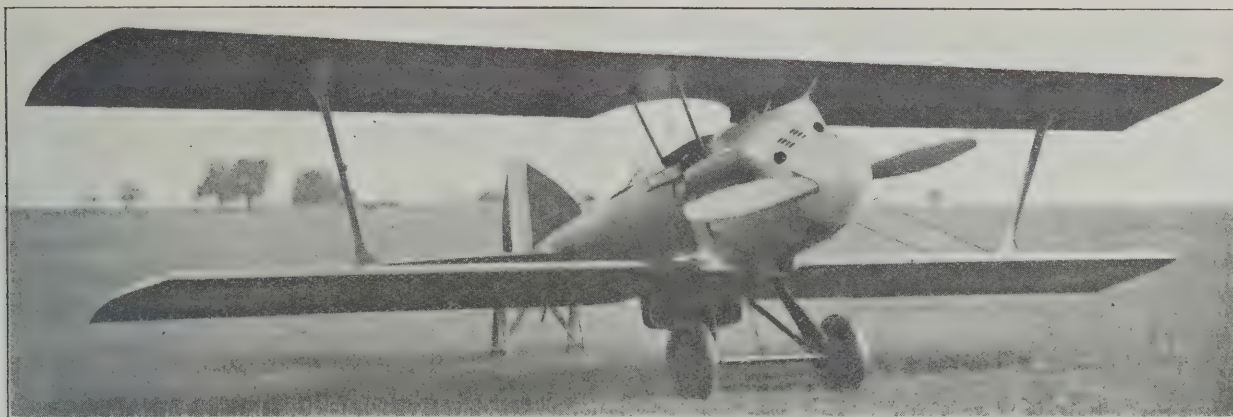
It has a beautifully streamlined monocoque fuselage, and, unlike many other present-day French machines, the rest of its lines are in keeping with those of the body. Altogether a very business-like little machine.

The Blériot 165.

Of this machine there is only the fuselage to be seen. The Blériot 165 is a twin Jupiter-engined passenger-carrying machine, intended to carry 15 passengers. These are accommodated in five rows of three seats abreast, in a cabin which is certainly not over-spacious. Perhaps it is for this reason that a large and elaborate warm air supply apparatus attached below the fuselage is made so much a feature of this exhibit.



The Besson Submarine Seaplane.



THE HEIGHT-RECORD-BREAKER.—The Spad 61 (Lorraine-Dietrich 480 h.p. supercharged) designed by M. Herbemont. Its record, 40,822 ft.

LOUIS BREGUET.

The Type XIX.

The Breguet stand is naturally dominated by the famous Type XIX., which should by now be sufficiently familiar to need no describing. The place of honour is taken by the actual machine flown by Commandant Girier and Lieut. Costes from Paris to Jask, on the Persian Gulf, in a non-stop flight.

This is not quite a standard XIX. The two cockpits have been moved further back in the fuselage, and the whole of the section of the body between wings is occupied by four colossal tanks. Two of these are within the fuselage frame; the other two are saddle tanks between the frame and the outer fairing. Another small difference is that the space between the top wing and the body is completely filled in.

When the machine took off from Le Bourget the total loaded weight was 4,157 kg. (9,161 lbs.), composed of machine, 1,518 kg. (3,345 lbs.); crew, food, and stores, 250 kg. (551 lbs.); fuel, 2,209 kg. (4,868 lbs.); and oil, 180 kg. (397 lbs.). The load, therefore, was approximately 1½ times the weight of the empty machine.

Another machine of the type XIX. was exhibited mounted upon duralumin floats—one of them mainly uncovered to show the construction. These floats are of the long type, with a steep Vee bottom and a domed upper surface, originally developed by the American Navy, and show considerably greater promise of seaworthiness than previous Breguet floats.

The construction is simple and effective. A central girder runs over the whole length from keel to deck. To this girder are attached a number of box section formers, which are tied together by a number of light stringers. The whole is covered with rivetted-on sheet, which is stiffened on the upper surface by longitudinal trough section strips rivetted on at about six-inch intervals.

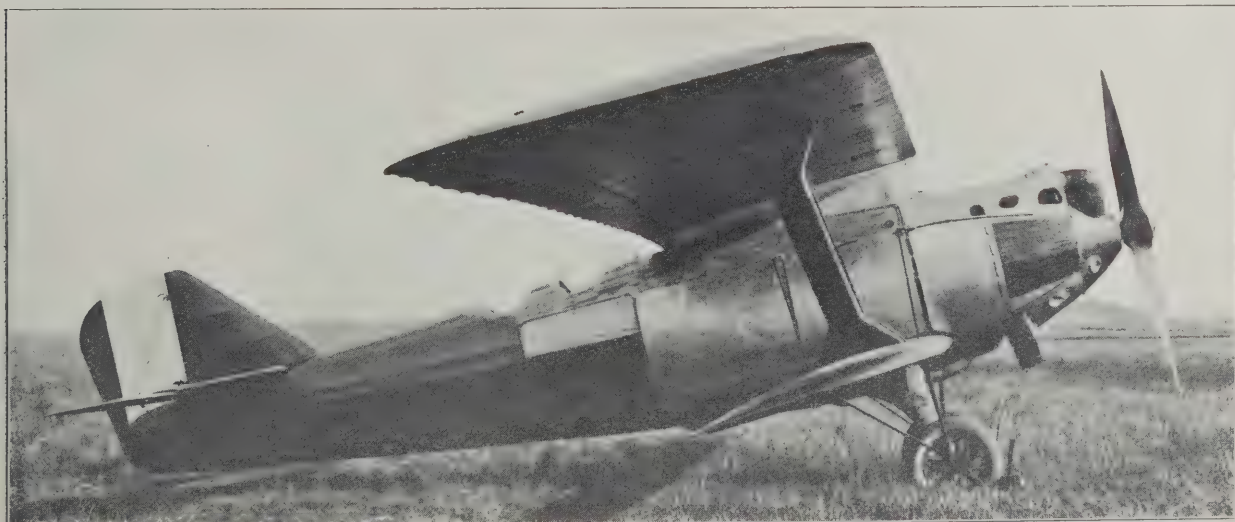
The Type XXVI. T.

There is also shown the type XXVI.T. This began life as the type XIX.T, and is really a set of type XIX. wings attached to a well-fattened up body, within which seats for six passengers are fitted.

Apart from the enlarged fuselage the machine is practically identical with the XIX. A Jupiter engine is fitted.



TANK CAPACITY.—One of the four tanks in the Breguet XIX which was specially built to beat the World's Non-Stop records and has three times flown over 2,500 miles without a stop. The shortest was from Paris to Basra.



THE "AVION DE GRAND RAID."—The Breguet XIX (Hispano-Suiza 500 h.p.) which set up the non-stop records, Paris—Omsk and Paris—Jask.

THE SAVAGE-BRAMSON ANTI-STALL GEAR.

As a result of crashes in 1926 seventy-eight deaths occurred in the Royal Air Force and two hundred and thirty aeroplanes were written off charge.

These figures were given in Parliament by the Secretary of State for Air on Nov. 22 of this year.

It is a fact well known to everyone actively connected with flying that the exceedingly high percentage of such crashes, officially ascribed to "an error of judgment on the part of the pilot," are really caused by accidental stalls.

It is needless here to enter into any lengthy argument as to whether that official expression is either accurate or just to the pilot. Suffice it here to remark that in most such cases the pilot has had no opportunity of exercising his judgment in the matter, having been given no indication whatever that a stall was imminent and having had all his faculties concentrated on some urgent or difficult task such as, for instance, bringing off a forced landing or finding his way in a fog.

It is, however, *physically impossible* for him suddenly to apply that extra pull *without knowing that he is doing so*. It is clear, therefore, that the warning is of such a kind that it cannot possibly fail to reach him; nor can it possibly be misunderstood.

The construction and operation of the Savage-Bramson Anti-Stall Gear was fully described in *THE AEROPLANE* of Aug. 19 and 26, 1925, but, for the benefit of those who did not happen to read or file that description a brief outline of the gear is given below.

Figure 1 shows the Stall Detector. It is an aerodynamically unstable wind vane held by a bracket which is attached to a front interplane strut, or in some other position of minimum turbulence. Being unstable the vane has only two possible positions, namely, on one or other of the stops which limit its angular movement. This angular movement is adjustable, and is normally set to about 7 degrees. Normally the vane rests on the bottom stop, with the air stream holding it down.

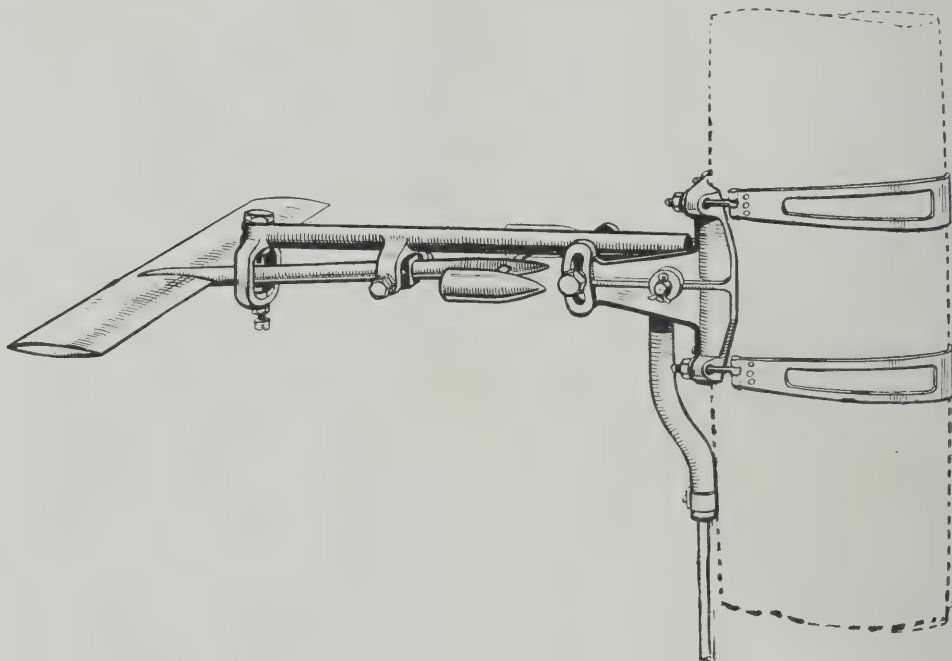


Fig. 1.—The Stall Detector, shown here, is an unstable vane facing the air stream, free to move through an angle of about 70°.

No aeroplane fitted with the Savage-Bramson Anti-Stall Gear, which is illustrated here, can stall accidentally. Just before the stalling point is reached the gear applies a sudden, forward warning force to the joy stick. This force is equivalent to about 10 to 15 pounds at the pilot's hand, and should he wish to stall the machine in spite of the warning, all he needs to do is to increase his pull on the stick by 10 or 15 pounds.

When the angle of incidence of the wings is increased to such an extent that the wind just begins to blow on it from below, it flips up to the top stop and there remains till the angle of the relative wind is reduced by 7 degrees from the angle that moved it over. When on the top stop the detector holds open a small valve which causes the Warning Unit to function.

It is clear that if the vane is set, for instance, at an angle

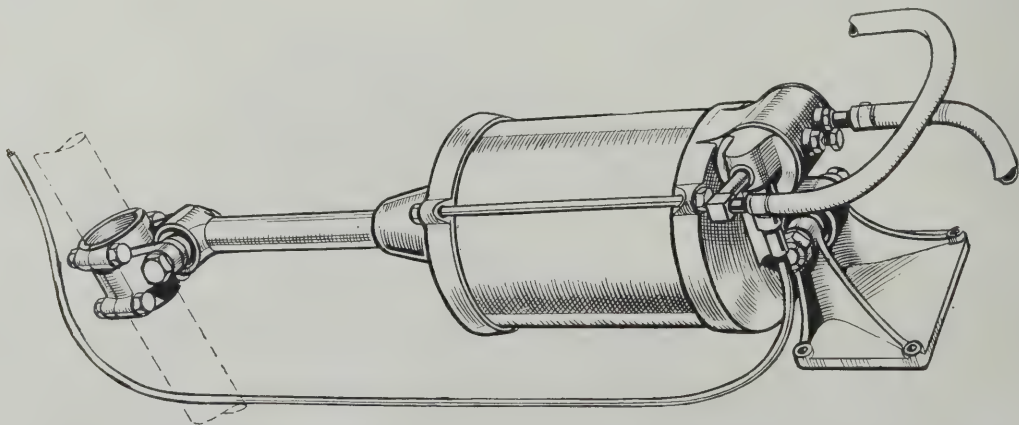


Fig. 2.—The Warning Unit. This is a cylinder, piston and rod, hinged respectively to some fixed part of the fuselage, and to the joy-stick, incorporating a pneumatic relay admitting air pressure to the cylinder when the Detector detects an approaching stall.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

of 14 degrees to the chord of the wings then it will flip up to the top stop when the angle of incidence of the wings is 14 degrees. If the incidence at which the machine stalls is 15 degrees, there will be a margin of one degree, and the machine will therefore be under complete control when the detector operates, that is, when the warning is given.

Figure 2 shows the Warning Unit. It consists of a cylinder and piston, about four inches diameter, to which air pressure of about 15 lbs. per sq. in. is admitted by a "pianola" relay valve when the small valve on the detector is opened. This pressure is maintained as long as the detector valve is open; it is supplied by the windmill pump (shown in figure 3) delivering into the air reservoir (also shown). The piston rod is attached to the joy stick through a universal joint, and the cylinder is similarly attached to some fixed part of the fuselage.

The operation of the gear in flight can hardly be more clearly described than by the following extract from a recent official test report:—

The operation of the device was tested in straight flight and in various manœuvres, such as loops, steep turns and spins . . . The device operated successfully and the indication given of an imminent stall, i.e., a sharp forward force on the stick, is considered a particularly suitable one . . . It seemed very consistent in action, and the indication was positive and of a very convenient nature. At the same time, the force applied could be easily overcome by the pilot and was not enough to put the nose of the aeroplane down violently. It was in fact an effectual warning . . . In a spin the device operated on the preliminary stall and stayed in operation throughout the spin in either direction. In taking off it operates if the aeroplane is taken off very tail down . . . The device operated correctly on steeply banked turns in either direction . . . The detector would be suitable for operating any form of warning device, but the particular form of indication chosen, that of a push on the stick, is considered very suitable, as it starts the pilot off doing the right thing at once.

The Savage-Bramson Anti-Stall Gear has the following distinctive features:—

1. It does not wait for the pilot to inquire from any instru-

ment, or otherwise, whether he is safe. It tells him as soon as he is not safe, and it conveys that message to his brain via his sense of touch. It does not even require a rapid reflex on his part to take correct action; on the contrary, it would require a rapid reflex not to do so.

2. In no circumstances can the Gear interfere in the slightest with the pilot's absolute control of his machine.

3. As the Gear depends for its functioning upon the stalling incidence of the machine, which is a constant for any given machine, the same adjustment will be correct for all load variations whether static (passengers, goods, petrol), or dynamic (centrifugal loads in a turn, etc.).

4. The type of warning given is identical with that employed by most flying instructors on dual control machines—(a tap on the joy stick) and the presence of the Gear, therefore, adds materially to the confidence of pupils both on their first solo flights and after.

5. Should a pilot endeavour to take off with the tail of his machine too low the warning will be given even before he has left the ground.

6. The Gear can be installed on any existing aeroplane at a low cost, and involves no structural alterations whatever.

7. The total weight of the Gear for a medium-sized machine is about 8 lbs.

The Savage-Bramson Anti-Stall Gear is patented in all the principal countries. These patents cover not only the principles involved but also all important features of design. It is manufactured by the British Instrument Company Ltd., of Hendon Aerodrome, London, N.W.9, to whom application should be made for further particulars and demonstrations.

In France the Gear is being manufactured under licence by Monsieur A. Odier, the well-known constructor and inventor of the aero-engine starter bearing his name.

The Anti-Stall Gear is being exhibited in operation at the Odier stand at the Paris Aero Show.

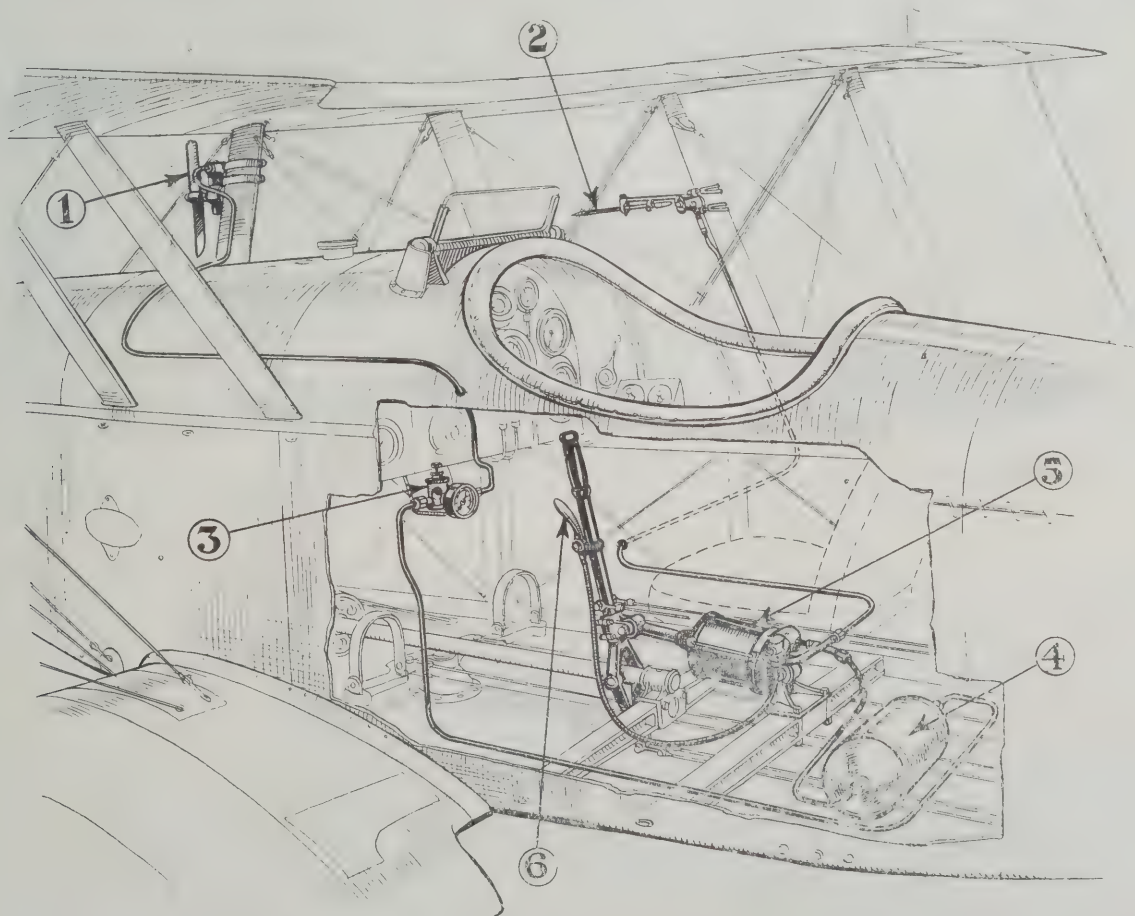
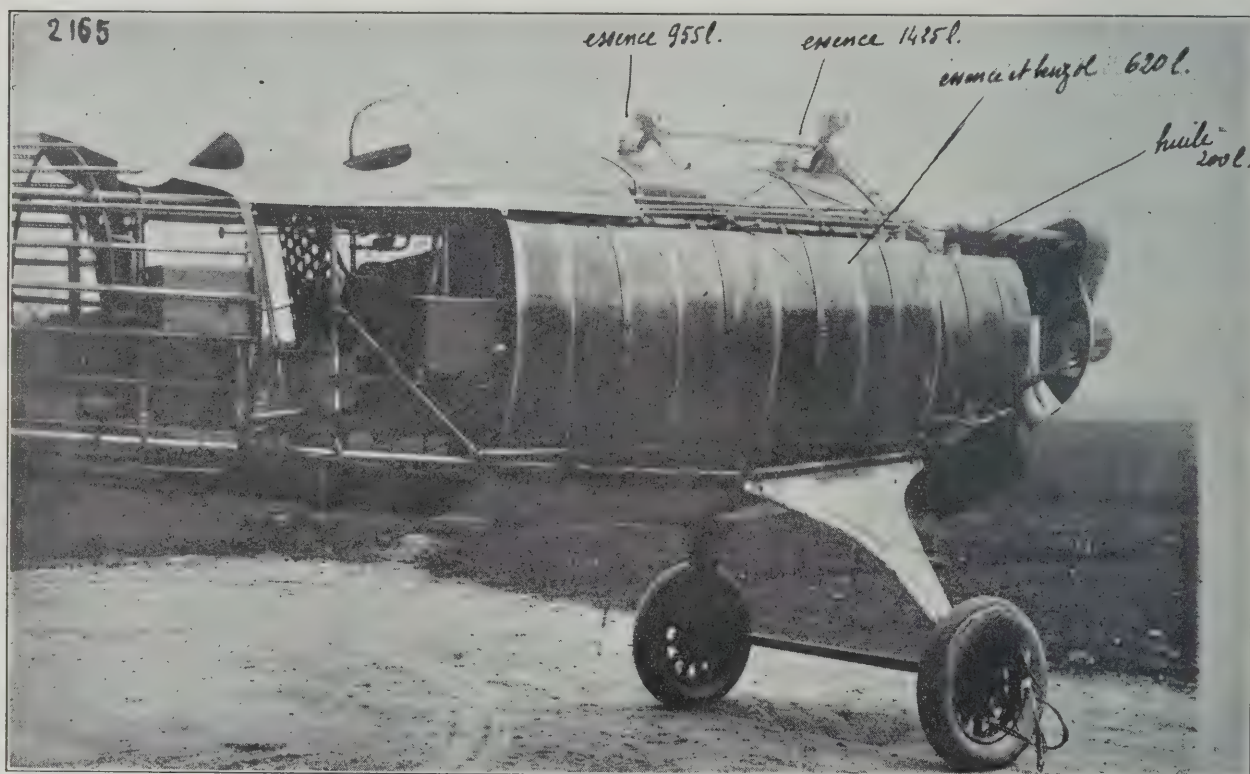


Fig. 3.—THE SAVAGE-BRAMSON ANTI-STALL GEAR: Installation Diagram—(1) Wind-mill Air Pump. (2) Stall Detector. (3) Pressure Relief Valve and Gauge. (4) Air Reservoir. (5) Warning Unit. (6) Cut-out Control.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



THE NEW BREGUET PASSENGER-CARRIER.—The XXVI.T., a modified XIX with Jupiter engine. It has the same wings as the famous Type XIX, but the body is fattened to carry six passengers and the pilot sits in front of the wings as in our De Havilland 34s.



HOW THE LONG-DISTANCE RECORDS ARE MADE.—The tank arrangement of the Breguet "de grand raid." Two tanks similar to those shown on the previous page are stowed in the middle of the fuselage, between the two saddle-tanks, the right-hand one of which can be seen in the photograph above.



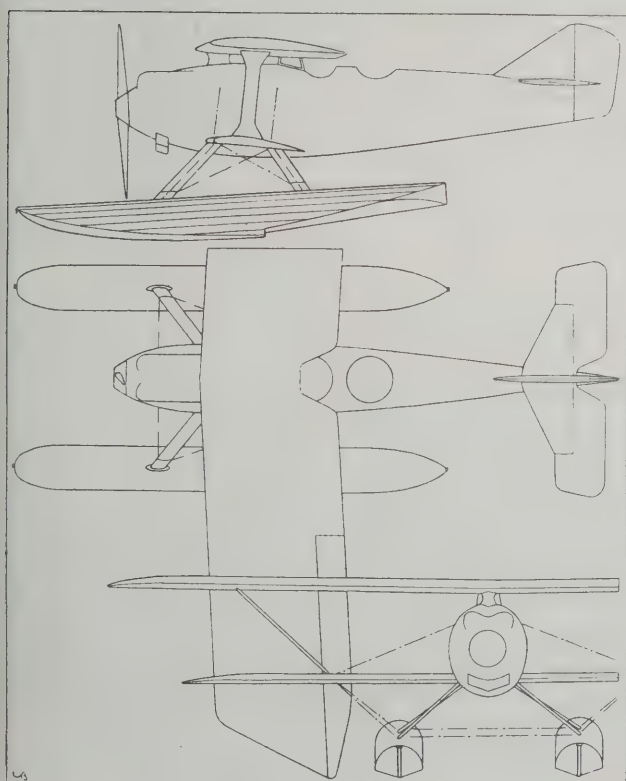
"PLUS CA CHANGE."—The C.104 G.R. Caudron, a two-seat fighter and grande-reconnaissance machine with Jupiter engine. The serrated trailing edge, familiar to all who knew the old Caudrons of 1912 or so, still persists and the general aspect is unmistakably Caudrons.



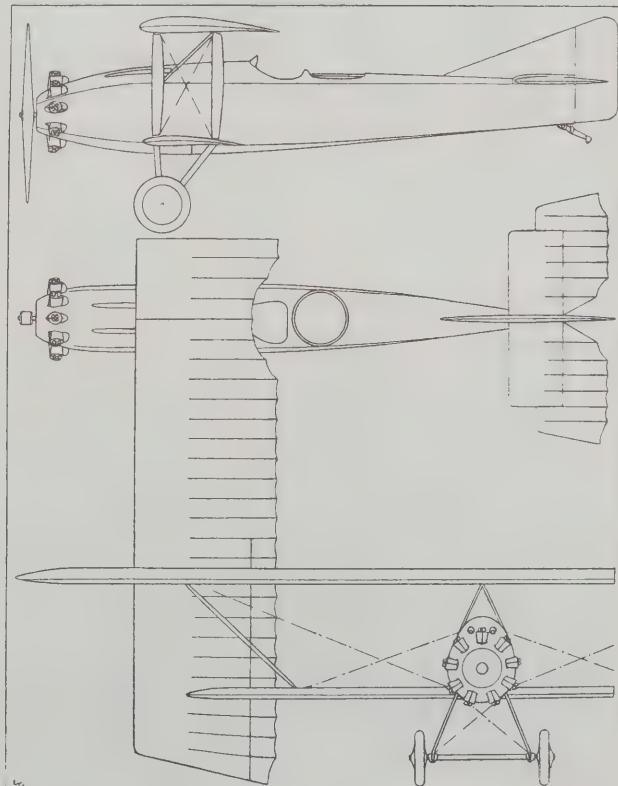
A FRENCH TOURER.—The Caudron 161, with Salmson 60 h.p.



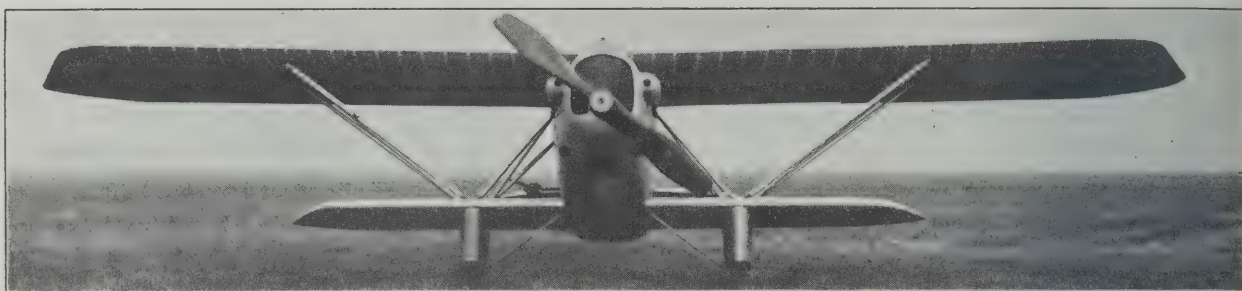
A NEAT LIGHT MONOPLANE.—The Caudron 109, with Salmson 40 h.p.



The Breguet XIX as a seaplane.



The Caudron Fighter, type C.104.



A CLEAN FRONT.—The Descamps two-seater (Lorraine-Dietrich 450 h.p.).

CAUDRON.

The Caudron firm exhibit one novelty—a very pretty little two-seater light aeroplane, fitted with the 40 h.p. nine-cylinder Salmson air-cooled radial engine, known as the type C.109. This machine is a parasol monoplane, with rigid strut bracing from the bottom of the fuselage.

The one serious criticism to be made of this machine is that it is extremely difficult to reach the front seat. There are about 15 inches between the top of the fuselage and the wing, and the seat is immediately below the wing. It is true that the upper surface of the fuselage is removable, but the top struts of the fuselage and the back of the seat come to within 18 inches of the wing, and the centre section struts have about the same distance between their bases and meet on the wing centre line. The unfortunate passenger therefore has to enter the pilot's (rear) cockpit and then climb through this 18 x 18 inch triangle to reach his place. It may be possible to do it, but heavens knows what will happen to the passenger in a crash.

There are two other machines on the stand—all now well-known. These are the 39 E.T.2, a training two-seater biplane, with the 180 h.p. Hispano-Suiza, and the C.161, a folding-wing two-seater biplane intended for the private owner, fitted with the six-cylinder 45 h.p. Salmson engine. Both these machines are very sound and straightforward products but far from exciting.

DESCAMPS.

Quite an interesting biplane, or perhaps it should be called a sesquiplane, seeing that the lower plane is so small, is shown by the Descamps firm. This is the Type 17A.2, an "observation and grand reconnaissance machine," with a Lorraine-Dietrich engine of 450 h.p.

Though stowed away under the gallery, the machine strikes one at once as having very clean lines. It is a two-seater fighter designed for very much the same class of work as the famous Breguet XIX, and the makers claim that with the same engine, a 450 h.p. geared-down Lorraine, it is some 20 kilometres an hour faster than the Breguet.

The upper plane is back-staggered behind the lower. Probably, as the lower plane is so small, this will not raise the landing speed in the same way that a backward stagger does in a machine of equal span top and bottom. The chief objection to the machine that one can see is that the main plane is brought down almost on top of the fuselage so that the pilot has a bad view forwards, though he can see very well upwards and downwards.

The chief claim made for the machine is that it is constructed entirely of standard material. The fuselage is of ordinary duralumin tubing and all the joints are plain sockets and clips held together by standard nuts and bolts. The idea is that the machine can be made a mass-production job sans outillage, that is to say without what the Americans call tooling-up a factory for it.

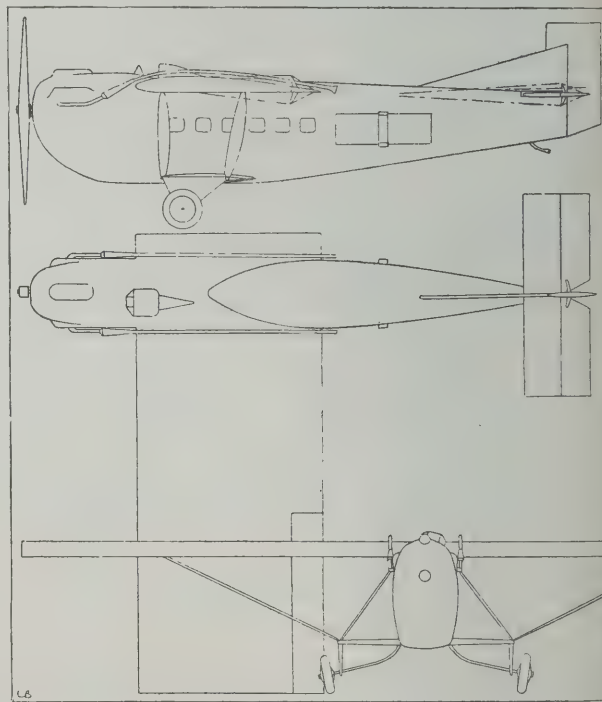
This means ease and economy in construction, the pos-

sibility of replacing any part of the machine even more easily than in a wooden machine, the use of unskilled, or, at any rate, not specially-trained labour, the entire abolition of welding and the abolition of all bracing wires. This method of construction applies to the wings as much as to the fuselage. Certainly the construction is about the simplest thing that anybody could imagine.

The machine evidently has a very good performance, as is shown by the official figures of the Section Technique. With a load of 808 kilos, of which 288 was fuel and 520 useful load, the machine got off in 106 metres and landed in 182 metres. Its maximum speed near the ground was 230 k.p.h. and at 5,000 metres, which was reached in just under 25 minutes, its speed was 196.5 k.p.h. The total weight of the machine is 2,045 kilogrammes in flying order.

DYLE ET BACALAN.

This firm show the centre section of a huge twin-engine machine in which the wing centre section is fattened up to an enormous thickness to provide cabin accommodation.



The Farman "Ventre-à-Terre" or "Jabiru."



GOOD LINES.—The Descamps 17A.2 (Lorraine-Dietrich 450 h.p.).



A DUTCH FIGHTER.—The Fokker C.V.D. (Hispano-Suiza 450 h.p.).

Essentially this is a reproduction on a large scale of the little De Monge 75 light aeroplane.

There is actually very little of interest about this mock-up which suggests that bridge girders transmuted into duralumin have conditioned the whole design.

FARMAN.

The Farman 160.

This is really our old friend Goliath equipped with two 500 h.p. Farman engines and fitted as a night bomber. Only the fuselage and centre section of this machine is shown.

The Farman F.170.

A passenger carrier derived from the Jabiru, by fitting one 500 h.p. Farman engine in the nose of the fuselage and removing the original engines from the lower wing roots which were originally provided mainly to accommodate engines. The machine is a high-wing monoplane which is braced by struts running from the aforementioned wing roots. It is a very ugly aeroplane but appears to fly as well as all other Farmans.

FIAT.

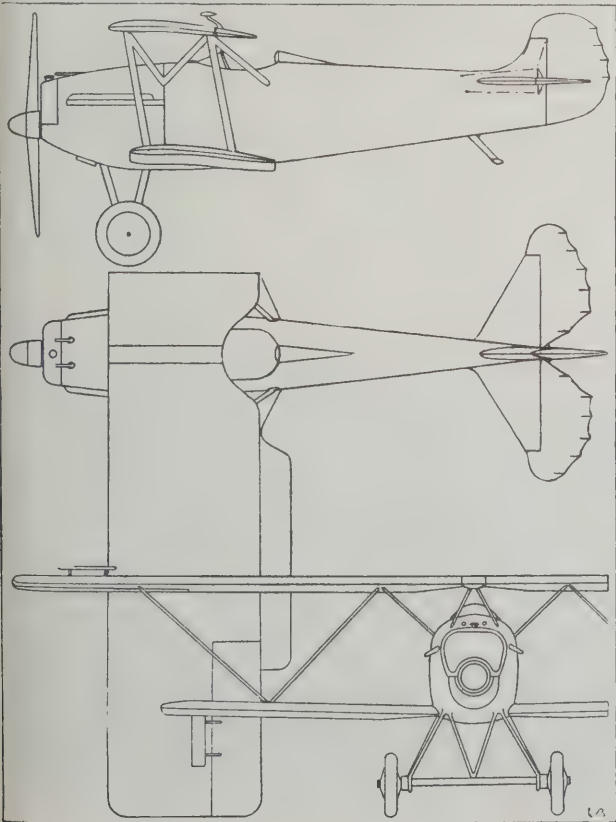
The famous Fiat firm show a small all-metal single-seat biplane, which is as neat a job as are all Italian aeroplane and automobile products. The Northern Italian seems to preserve the pride of the artist-artisan which produced the

marvellous metal-work of the Italian renaissance. Bad workmanship seems impossible in Northern Italy—Mussolini or no Mussolini.

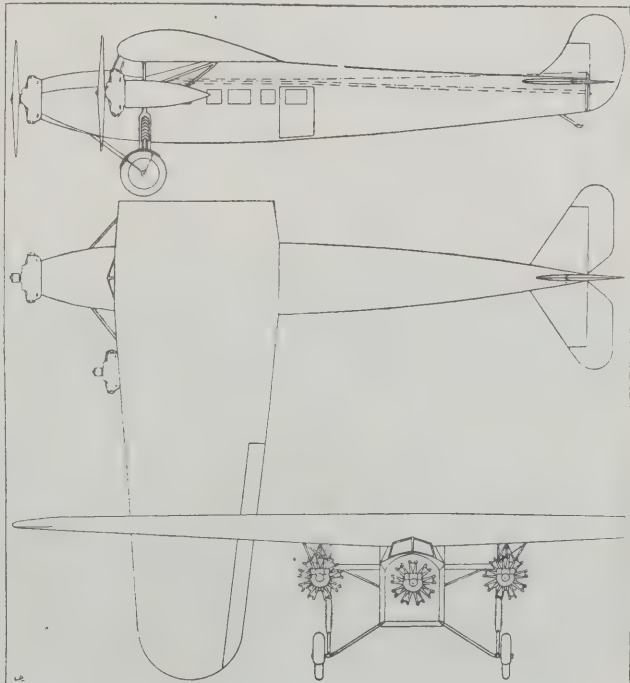
Design is another matter, and there are points about the Fiat which might give rise to argument, as, for example, the combining of steel and aluminium, which according to some authorities is liable to cause electrolytic action and consequent corrosion. One German humorist in fact has asserted in jest that when steel and aluminium surfaces in contact become moist they set up enough electric action to cause a glow in a flash-lamp bulb.

The Fiat wing has sheet-steel box-spars of ingenious design. They are made up of two channel sections with the edges placed so that they overlap, and are rivetted together along the top and bottom of the spar. The bottoms of the channels, which thus form the webs of the spars, are punched out in triangular holes so that what is left forms a kind of Warren girder. The ribs are of aluminium alloy and the cross-bracing is steel cable.

The fuselage is of steel tubing in Warren girder form. Over this is a lattice-work of strip duralumin, beautifully made, which forms the skeleton for the fabric fairing. Certain members of this lattice are thickened into a girder form so that they act as vertical struts at the apices of the Warren girder triangles, and where they join they are rivetted to sheet-steel plates. Being curved to the shape of the fairing they cannot have much value as struts, but probably the tubes are strong enough without them. The bay of the fuselage which forms the cockpit is strengthened by sheet-aluminium struts of girder section, also rivetted to steel plates.



The Fiat C.R.20 (Fiat A.20 400 h.p.),



The Fokker F.VII 3M. (three Armstrong-Siddeley Lynx engines 200 h.p. each).

The whole thing is beautifully done, with thousands of faultless rivets. But one does not like this marrying of steel and aluminium.

Two other points which call for criticism are the radiator, which is on top of the nose of the engine-cowling, where it seems likely to blanket the airscrew badly, and the tail-control cables, which after passing over sundry very small pulleys (which suggest constant renewal of cables) come out of the fuselage in front of the tail-plane where they form an air-jam which spoils what would otherwise be a very fine streamline.

Apart from that the machine is admirable in its general lines, though, in order to get those lines, the four guns (two on top of the engine and one low down on either side of the fuselage) are so boxed in that the pilot could hardly clear a jam—even by the good old fitting-hammer method—and they must break an armourer's heart to replace. The compiler of the American pursuit-ship specification would throw fits at several such details.

Nevertheless, with her 400 h.p. Fiat engine, the machine must have a fine performance, and is probably delightful to fly.

FOKKER.

The Fokker C.V.

The Fokker C.V., the well-known general utility two-seater machine, is shown fitted with the type 51 Hispano-Suiza (450 h.p.). The machine shown is the property of the Dutch Military Air Service and was lent to the Fokker firm for the Exhibition. It is fitted with two synchronised guns firing forward, and the usual Scarff ring in the observer's cockpit.

An interchangeable nose, carrying a Gnôme-Rhône Jupiter may be fitted in place of the Hispano mounting.

The C.V. is an unequal-winged cantilever biplane, with the usual Fokker welded steel tube fuselage and wooden wings. The two wings are heavily tapered in plan, and are joined towards their outer extremities by V-type struts. Altogether the C.V. is a very workmanlike-looking job, and a strong contrast to many of its neighbours.

The Fokker F.VII 3M.

This now well-known type of machine is here shown fitted with three Armstrong-Whitworth Lynx engines—which, one understands, gives rather more power and cost rather less than the original Wright Whirlwinds used on this type. It is not easy to find much to say about this machine—which to all intents and purposes is the standard Fokker monoplane known for its excellent service on the K.L.M. services, fitted with three engines instead of one. The two wing engines are suspended below the wing just outboard of the vertical undercarriage struts, by a welded steel tube structure, and oil tanks are fitted behind the engines and enclosed in a neatly streamlined egg. Each engine is fitted with hand starting gear.

As in all Fokkers the fuselage is of welded steel tube, and the wing is of timber, ply-wood covered. Pilot and mechanic sit side-by-side, with their heads let into the leading edge of the wing, and are provided with a very complete system of wind shielding.

HANRIOT.

The Hanriot H.35.

A two-seater advanced training machine of the strut-braced parasol monoplane type, fitted with the 180 h.p. Hispano-Suiza engine. The fuselage, wing spars, and bracing struts are of duralumin.

Dual control, with a declutching gear for the pupil's control is fitted. Altogether a fairly simple and straightforward but entirely unexciting machine.

The Hanriot H.41.

This machine is the well-known Hanriot elementary training biplane which has been in use with little alteration since the end of the War. Its most noticeable characteristic is the forest of struts in the undercarriage—which in the standard land type is of very wide track fitted with skids, over each of which a pair of wheels is slung on rubber shock absorbers in the manner usual in the pre-war Farman box-kites.

The machine is shown both as a land machine, and fitted with a pair of box-type floats. In this latter type still more struts have been added to the undercarriage. The 80 h.p. and 110 h.p. Le Rhône or the 120 h.p. air-cooled Salmson may be fitted.

The Hanriot H.14S.

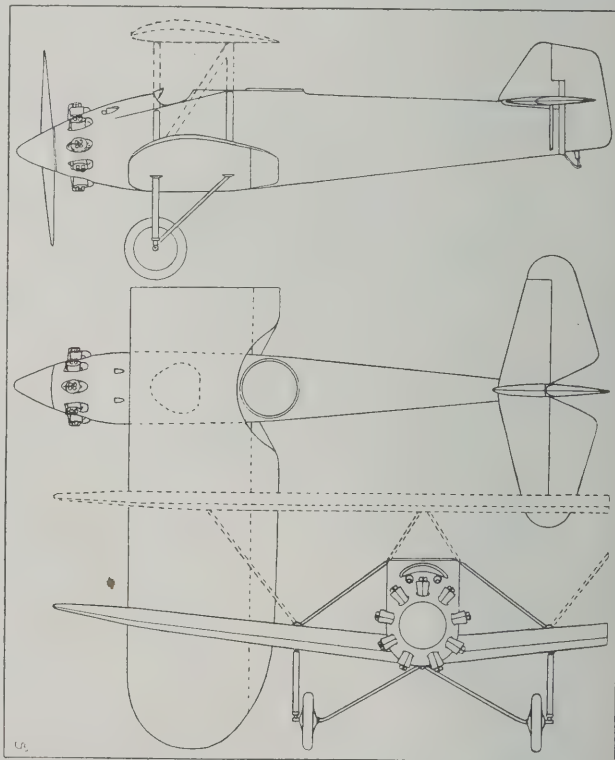
This is the land training machine, with the after cockpit removed, a long side door arranged in the body aft of the pilot's seat, and fitted with slings so that a wounded man in a stretcher may be accommodated.

KOOLHOVEN.

The Koolhoven F.K.35.

The Koolhoven F.K.35 is, one is assured, derived directly from the well-known F.K.31 by a process of keeping in the good points of the original and carefully eliminating weight in detail. From a general external view this derivation is not at first apparent.

The F.K.35 is a low-winged monoplane with a rectangular fuselage, fitted with a Jupiter engine. The pilot's seat is over the leading edge of the wing. The top of the fuselage



The Koolhoven Mono-Biplane, F.K.35.



A PIONEER'S LATEST.—The Hanriot H.35 (Hispano-Suiza 180 h.p.).



A CZECH FIGHTER.—The Letov (or Smolik) S.16 (Lorraine-Dietrich 450 h.p.).

slopes down fairly steeply downwards from this seat, and the two Vickers guns are carried above the body line covered by little "bonnets" which are easily removed for inspection. The view from this seat is amazingly good.

The slope of the body top deck continues back past the pilot's cockpit to that of the observer—who is thus well above everything else and can use his gun in all directions. This cockpit is fitted with the new Koolhoven mechanical turret—by which the gun-ring and gunner may be rotated to any angle against any wind force, by a process of winding up a fly-wheel by pedalling and letting in a clutch.

The wing is built in one unit right across the body, and is braced by struts down from the fuselage to about one-third of the half-span out. The undercarriage Vees are attached below these struts, and meet a hinged axle running down from the body. The front leg of each V has compression rubber shock absorbers and an oleo-damper with one foot of travel.

The wing is of a stable (constant C.P.) section, fitted with flaps over the whole span. The wing is entirely plywood covered and extremely stiff in torsion, and the flaps have their C.G. on the hinge axis. Consequently there is no likelihood of wing flutter trouble.

The machine is so arranged that a top wing may be added and fittings for the upper wing bracing struts are all in position. By making this addition to the surface the machine may be made to carry reconnaissance or bombing loads.

LETOV.

The Smolik 16.

The Aircraft Works "Letov" of Prague show two machines. The first the Sm.16 is a reconnaissance and day-bombing type, fitted with a 450 h.p. Lorraine-Dietrich. The Napier Lion, the 500 Hispano, the 480 Renault or the Breitfeld Danek 500 h.p. engine may be used alternatively on detachable engine mounts.

This machine is of metal construction. The body is of steel tubing not welded. Details of wing construction are not available, but they are said to be mainly metallic. Externally these are of the equal-winged single-bay biplane type.

An extremely complicated system of strut bracing is used for the wing centre section, presumably with the idea of keeping a clear space over the body both for purposes of vision and for access to the Vickers guns.

The Smolik 18.

This is a two-seater training and touring biplane with the

60 h.p. Walter radial. The fuselage is of the rigidly-strutted ply-wood box type, with the two seats in tandem. Wings are of single-bay type, with N-type struts and duplicated cable bracing.

Complete dual control is fitted, and as the top decking of the fuselage is broken over the whole length of the two cockpits, a pupil in the after seat is able to see exactly what the pilot in front is doing. This is another very business-like looking machine.

PIERRE LEVASSEUR.

Two-seater Fighter.

This enterprising firm exhibit three types of aircraft, all of very sound design, and free from freakish features, and having a satisfying substantial appearance.

The smallest is a two-seater fighter fitted with a 500 h.p. Hispano-Suiza engine. This is a biplane with wings of nearly equal span, but with an upper wing of much greater chord than is the lower one. These wings are fitted with one single I strut per side and one bay of streamline wire bracing. The lift wires are taken from the end of the undercarriage axle. Spars are of duralumin.

The fuselage is of wood, with rigid Warren truss bracing, entirely free from metallic fittings except at wing spar, etc., joints, and without wire bracing. Pilot and observer are both seated behind the wings.

The undercarriage legs are built up and faired in one piece, and no springing, except that of extra large size tyres, is provided.

The tail unit is of considerably more generous area than is usually found in French aircraft.

Three-seater Naval Reconnaissance Type.

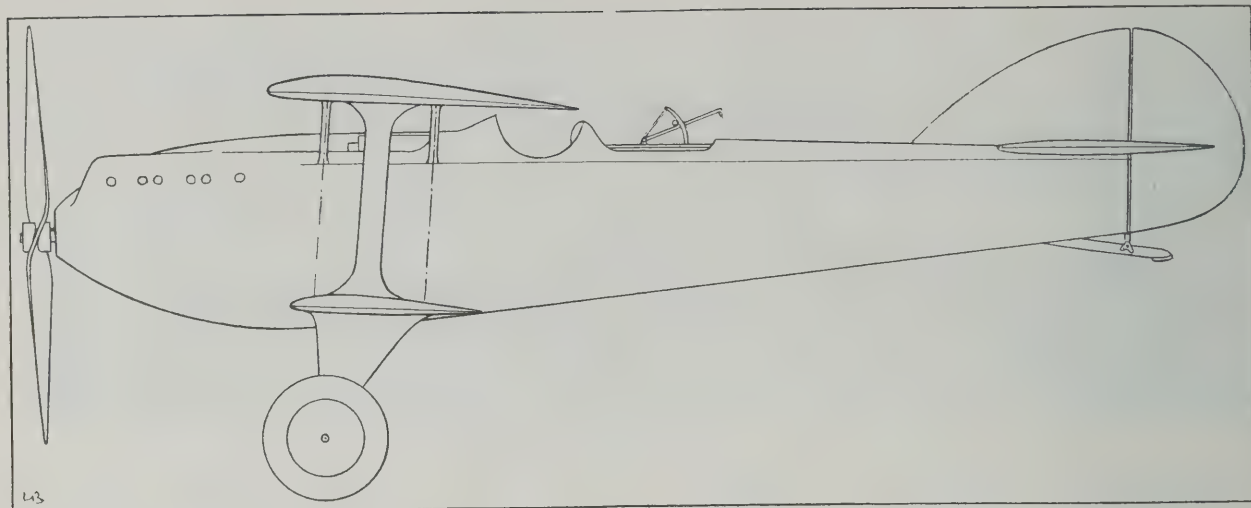
The next largest machine is a three-seater for Naval reconnaissance. This is a development of a type shown at the last Paris Salon, and is fitted with a waterproof ply-wood covered fuselage, wing-tip floats, and an undercarriage which may be dropped, so that the machine may safely be "landed" on water, and remain afloat. A special airscrew-locking gear under the pilot's control locks the screw in the horizontal position when this manoeuvre is to be performed.

The fuselage is of a similar Warren girder construction to that used in the two-seater machine, and the whole is ply-wood covered. The bottom surface is of V form to reduce alighting shocks.

Folding wings are fitted to facilitate stowage on ship-board.



A CZECH TOURER.—The Letov S.18 (Walter 60 h.p.).



The Levasseur 6 C.2 two-seat fighter (Hispano-Suiza 500).

The pilot is seated ahead of the wings, a navigator—who has also a complete dual control—sits below the centre section and an observer-gunner is seated well aft. The machine is completely equipped with receiving, transmitting, and direction-finding wireless.

Six-seater Passenger Carrier.

The third machine on the stand is a civil transport type—a new departure for this firm. This is a single-bay folding-wing biplane, having a lower wing slightly smaller than the upper, and a fuselage of a cross-section which is distinctly large relatively to the other dimensions of the machine.

This fuselage is of the same rigidly-braced construction as is found in the other Levasseur machines, and provides in the interior a cabin space giving very comfortable accommodation indeed for the six passengers. Incidentally this cabin has a larger window space than any other of its size that one has yet seen.

An open cockpit for pilot and navigator is provided ahead of the wings, and the nose of the body ahead of the cockpit slopes downwards and forwards at a considerable angle, giving an excellent view forward.

The engine fitted is the Gnôme-Rhône Jupiter.

LIORE ET OLIVIER.

The Le O. H.190.

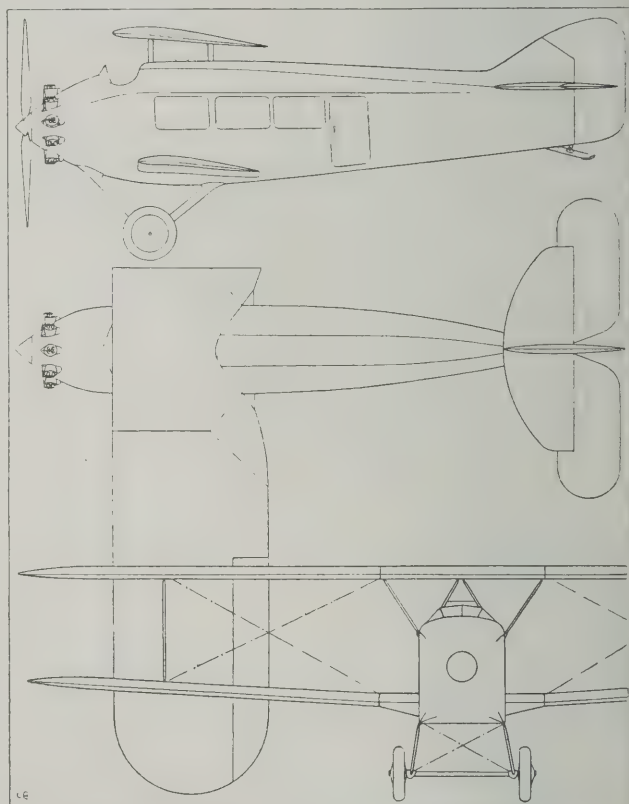
A biplane flying boat with a single Jupiter engine of a type regularly used on the Antibes-Ajaccio service, also by Lieut. Bernard on his recent flight from Etang de Berre to Madagascar.

In the normal transport type six passengers are carried in the extreme bows of the hull in somewhat cramped and by no means too well-lighted a cabin. This is apparently entered by a small hatch in the deck, and frankly does not look easy to escape from in case of a crash.

The pilot sits right aft of the wings, and apparently cannot have a very good view in any direction.

The engine is carried close up to the centre section of the upper wing by three struts on each side, and a further pair of struts supports the centre section, making altogether a somewhat untidy-looking mass of supports.

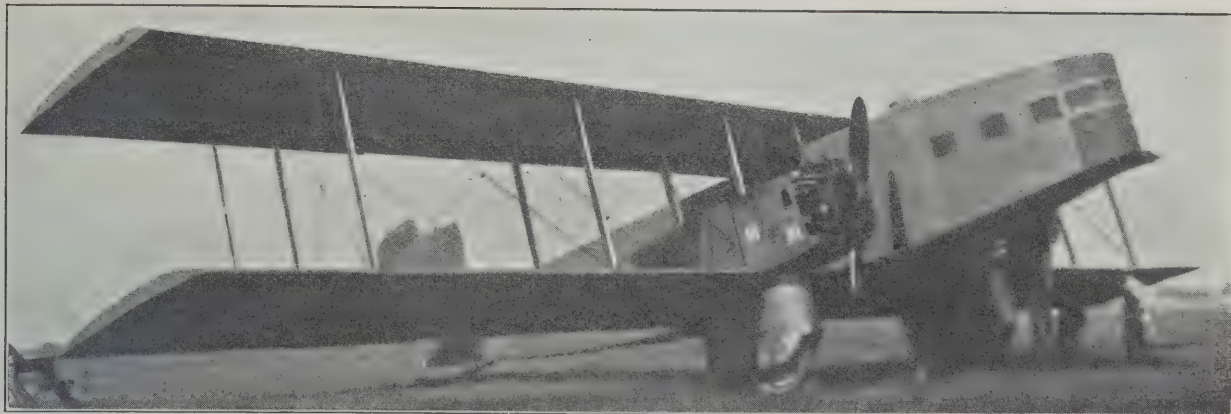
The hull—of three-ply—has a very marked Vee bottom and a single, rather deep step.



The Levasseur 7T. six-seat passenger-carrier.



A WATER-LANDER.—The Levasseur Naval Reconnaissance machine (Lorraine-Dietrich 450 h.p.) designed to be launched from a ship and to alight on water.



A NEW DEPARTUE.—The LeO.21, a twelve-seat passenger-carrier (two Jupiters).

The LeO.21.

This machine, which has recently started to run on the Air Union London-Paris service, in some ways reminds one of the Farman Goliath. This resemblance is mainly due to the cut-off square wing tips, and to the passenger cabin divided in two parts by the pilot's cockpit.

The LeO.21 is of the normal twin-engine type, with engine nacelles on the lower wings. The sample exhibited has two Jupiter engines, but the 450 h.p. Lorraine, the 450 h.p. Hispano-Suiza, or the 480 h.p. Renault engines are all interchangeable, each engine mounting being a separate unit which attaches to a fixed structure on the wing by four bolts. Oil tanks are part of the detachable unit, but fuel tanks are apparently on the wing behind a fireproof bulkhead.

There is one undercarriage—a huge streamline trouser affair—under each engine. The wheel is sunk into this trouser, which is braced to the fuselage and out to the wings by streamline wires.

The wings are of equal span and chord, unstaggered, and have two bays of bracing on each side beyond the engine. It is said on very good authority that this machine does fly quite comfortably with full load on one Jupiter engine.

The LeO.H.15.

This is represented only as a large-sized model. It is a decidedly taking-looking three-engined flying-boat, fitted with three Jupiter engines. These are arranged at the angles of an equilateral triangle, the apex of which is on the top-centre section, with the other two angles about midway up the gap of the wings.

This machine is a civil transport type for 12 passengers.

LOIRE-GOURDOU-LESEURRE.

This firm shows two pursuit-ships of the parasol type which is so popular in France at the moment. One is a bright yellow machine with a Jupiter engine and a Levasseur-Reed airscrew. It is placed in a position which suggests the last moment of a *chute mortelle*. One hopes that it is not an evil omen.

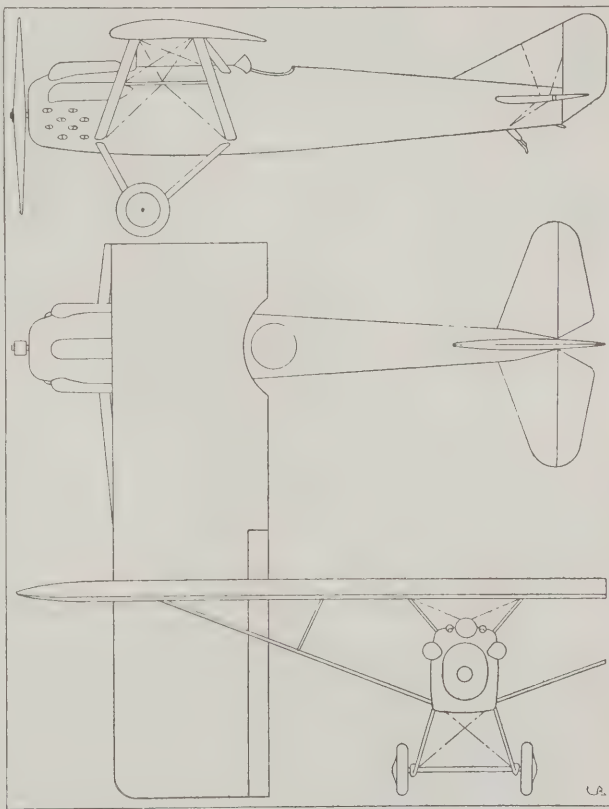
The other machine is a kind of khaki green with a 450 h.p. Renault and a wooden airscrew.

There is nothing very remarkable about the machines in appearance. The wings are braced by two long streamlined struts on each side, one to the front and one to the back spar, which struts are themselves connected to one another half-way along their length by a fore and aft strut and the ends of these are again connected to the main spars by short struts at right angles to the main struts. And then the whole

thing is cross-braced by wire. So there is about as much strutting in it as if it were a short-span biplane. The tails and the fins are also wire braced.

One imagines that the result is a slower machine than might be. The machines have long thin fuselages and comparatively small tail areas which may give a very good control but do not seem to promise manoeuvrability.

Like all the French fighters they carry two Vickers guns in the cowl and two Darne guns in the centre section.



The Gourdou-Leseurre 33 C.1 (Renault 480 h.p.).



A COMMERCIAL SEAPLANE.—The LeO.H.190 (Jupiter) six-passenger flying-boat.



THE PIONEER OF THE PARASOL.—The Morane-Saulnier 129 E.T.2 (Hispano-Suiza 180 h.p.). An advanced Training machine. MM. Morane and Saulnier were the first to build parasol monoplanes,—in 1913 or so.

MORANE SAULNIER.

The Morane 35 E.P.2.

This is the perpetual parasol monoplane, with piano wire bracing and an 80 Le Rhône engine, which is still used for elementary training in France. It differs little from the 1914 Morane Parasol, and need not therefore be further described.

The Morane 129 and 132.

These two machines are identical except for their engines, and are both of a type suitable for instruction and touring purposes. The 129 has an 180 h.p. Hispano-Suiza engine, and is used for advanced training in the French military air service. The 132 has the 120 h.p. air-cooled Salmson radial.

Both are parasol monoplanes, with a fairly thick wing and rigid strut bracing. Tandem seats with complete dual control are fitted, but the user of the rear control has to rely on the instruments in the front cockpit. As the machine used as a single-seater would presumably be flown from the back seat, this is rather a bad point.

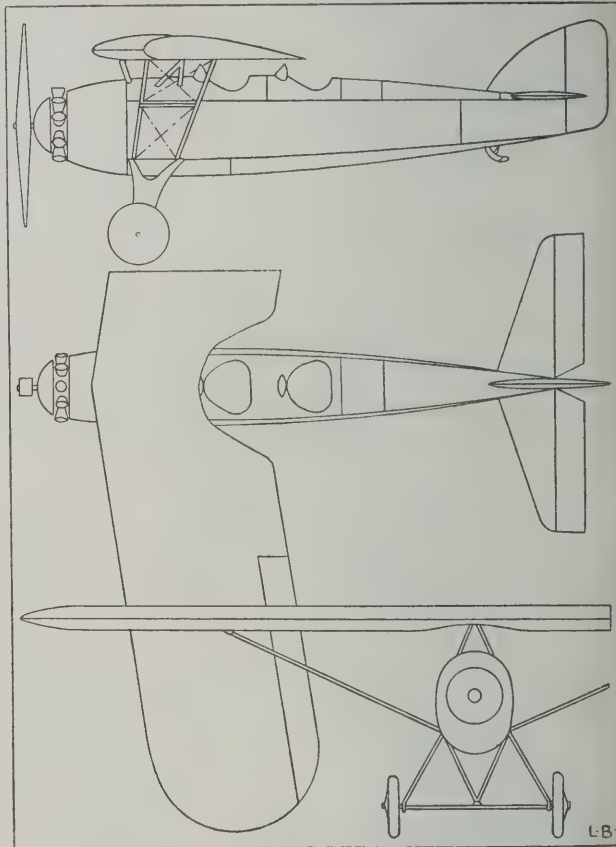
These machines are beautifully finished in all details, as all Moranes have been from time immemorial.

Their most noteworthy feature is the use of a shock absorber very similar to that of the standard 504K Avro, which is completely enclosed inside the undercarriage Vee struts. These struts are built of duralumin affairs of the trousered type.

ATELIERS DES MUREAUX.

The Ateliers des Mureaux showed at the Grand Palais some years ago a Vickers Vimy. This time they have produced a machine of their own design, built of aluminium with fabric covering. It is a large two-seater parasol monoplane with a 500 h.p. Hispano-Suiza and a Levasseur-Reed airscrew. And like so many of these parasols it is a mass of struts.

Including the two wing struts, one to each spar, it has eight struts a side all of massive proportions. The other six go to form a split undercarriage so as to do away with a cross axle between the wheels. The arrangement to carry the wheels consists of a pair of deep duralumin girders between which each individual wheel is slung on rubber shock-absorbers. This girder arrangement and the upper half



The Morane-Saulnier 132.



ANOTHER TOURER.—The Morane-Saulnier 132 (Salmson 120 h.p.).



THE LATEST FRENCH SPEED MACHINE.—The Nieuport-Delage 48 C.1 (Hispano-Suiza 400 h.p.) known as the "Type Jockey,"—the newest Pursuit Ship of the French Army.

of the wheel is then covered by a streamline lid rather like an elongated dish-cover.

Presumably by way of making up for the head resistance of all these struts all the controls are entirely stowed away inside the fuselage and wings so that the machine is extremely clean externally.

On the same stand as the complete machine there is a fuselage showing the methods of construction. The whole thing is built of plain duralumin tubes with the ends flattened, or trapped, as we used to call it in the bicycle-making trade, the trapped ends being rivetted into sheet aluminium lugs. The method is simple and cheap.

NIEUPORT-ASTRA.

The Nieuport 42 C.1.

So far as can be seen this is identical with a machine exhibited by the same firm at the last Paris Show. It originated as a sesquiplan, with a small lower wing enclosing the undercarriage axle, and a large top wing supported by Y struts running up from the ends of the undercarriage winglet. To this has been added a further wing very much tapered in plan, running from the bottom of the body and out through the Y struts on each side. In fact of course the struts run through the wings.

The fuselage is of the usual beautiful Nieuport monocoque, carrying a 500 h.p. Hispano-Suiza engine in the nose. Fin and tail plane roots are moulded into the body.

Undercarriage and wing struts are all of duralumin, built up from sheets pressed to form and rivetted. Wings may be either of timber or duralumin construction. Fuel tanks are carried in the wings, and as with most French military aircraft are fitted with jettisoning valves so that tanks may be emptied rapidly in an emergency.

The Nieuport 48 C.1.

This is a very similar machine, without the added wing of the 42 type, and generally of slightly smaller dimensions, and fitted with the 400 h.p. Hispano. It carries a considerably heavier wing loading than the 42, but weighs less, and it has consequently a considerably higher speed low down, but a distinctly inferior climb.

POTÉZ.

The Potez 25A2.

A two-seater reconnaissance and medium bomber, fitted with the broad-arrow type 500 h.p. Hispano Suiza. It is of the single-bay biplane type, with a fairly heavy stagger and an upper wing of greater chord and slightly greater span than the lower.

The machine is mainly of normal timber construction, with undercarriage, interplane struts and engine mountings of duralumin.

The engine mounting is detachable and interchangeable with mountings to carry either the 450 h.p. Lorraine-Dietrich, the 500 h.p. Farman, the 480 h.p. Renault, or the inevitable 420 h.p. Jupiter.



THE SESQUIPLAN.—The Nieuport 42 C.1 (Hispano-Suiza 500 h.p.), a single-seat fighter with better climb and lower speed than the "Jockey."



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ENGINES: 450 H.P. BRISTOL JUPITERS.

"The 'HERCULES' produced to the order of Imperial Airways Limited for the Cairo—Karachi Air Mail Service is an 'air liner' in every sense of the word. Maximum comfort for the passengers combined with really high performance and the embodiment of every safety precaution render it the finest and most up-to-date commercial aircraft in the World." Vide Press.

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The fuselage frame is constructed entirely of steel, the passenger cabin being mounted internally and insulated with sound proof material.

A large luggage bay is located behind the cabin.

The cabin can be warmed or cooled by the movement of a small lever.

Sufficient fuel is carried for flights up to 525 miles.

The auxiliary starter motor is operated from the pilot's cockpit.

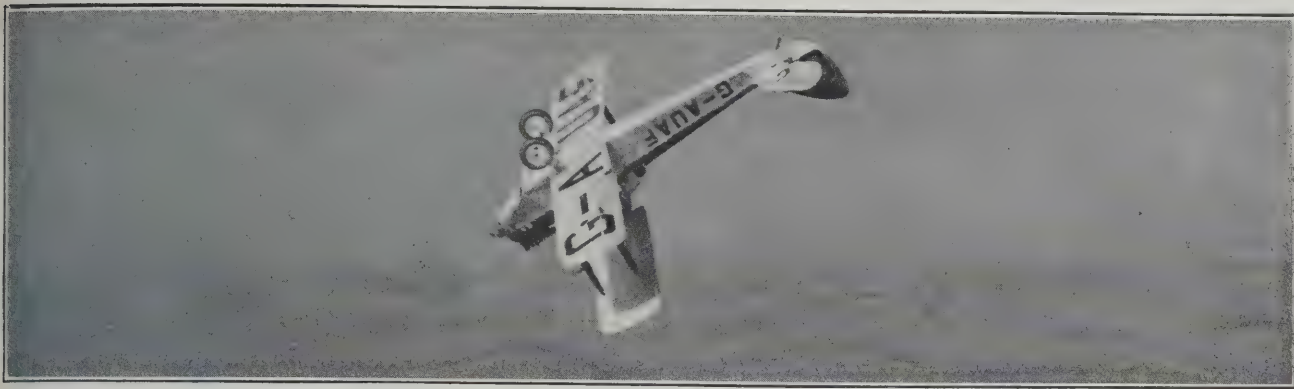
A complete wireless transmitting and receiving set is installed.

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| Top Speed ... | 130 m.p.h. |
| Cruising Speed ... | 110 m.p.h. |
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| Length ... | 66 ft. 0 in. |
| Height ... | 18 ft. 0 in. |
| Rate of Climb at ground level ... | 765 ft./min. |

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"CIRRUS" Mark II 30-75 H.P.

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Au cours des derniers dix-huit mois, les "MOTHS" ont volé plus d'un million de kilomètres avec un degré de régularité et d'économie qui n'a pas été atteint jusqu'à présent dans le domaine de l'aviation.

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"CIRRUS" Mark I 27-60 H.P.

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ESTUDIADO especialmente para corresponder a las exigencias del entrenamiento moderno, el "MOTH" está eminentemente adaptado a la instrucción de los alumnos principiantes.

Sus mandos son fáciles y rectos y la marcha del aparato es tal que, después de haber obtenido sus Certificados con los "MOTHS," los pilotos se hallan calificados, con el mínimo de perfeccionamiento, para el pilotaje de aviones de caza ligeros rápidos de gran facilidad de manejo, como también de los multimotores de bombardeo o de los grandes aviones de transporte.

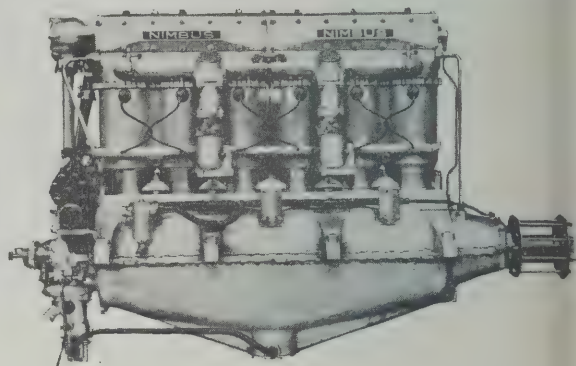
Durante estos últimos diez y ocho meses, los "MOTHS" han volado más de un millón de kilómetros con un grado de regularidad y de economía no conseguido hasta la fecha en el dominio de la aviación.

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The Bristol Aeroplanes

Wherever "Bristol" Aeroplanes are used—and they are in service in most parts of the world—their high standard of quality is recognised. Since "Bristol" aircraft were first seen in flight nearly seventeen years ago the question of quality has always been kept in the forefront—quality of design, quality of material, quality of workmanship—and it is a rigid adherence to the slogan that "nothing but the best is good enough for a 'Bristol'" that has formed the foundation upon which the very solid reputation of the "Bristol" aeroplane is based. "Ship-shape and in Bristol fashion" was the measure by which the old Elizabethan sea-dogs judged their craft; "The 'Bristol' fashion" is still the standard by which the modern pilot of the air adjudges quality in an aircraft.

Experimental work on a wide basis is continually in progress and the results of these efforts are embodied in the "Bristol" machines. For some years past, for instance, the Bristol Company have been steadily developing their organisation for the construction of all-metal aircraft so that to-day not only have they one of the best-equipped departments in the country for this class of work, but they have also developed types of all-metal aircraft which have proved after long flying service to be machines of exceptional efficiency.

The "Bristol" Boarhound.

A good example of "Bristol" all-metal construction is the "Bristol" Boarhound, an efficient biplane for use as a two-seater fighting or reconnaissance machine or as a day bomber. The structure is entirely of metal with the exception of the fabric covering, and 95 per cent. is of steel. Following the general principles which have been developed in "Bristol" all-metal machines, the construction is such that in the event of small local damage repairs can be carried out rapidly by any average mechanic. In the event of extensive damage the design is such that, for instance, even should a spar be buckled beyond repair, the member may be taken out of the wing and replaced with very little labour. The fuselage is also constructed of easily detachable components.

Especial attention has been devoted in the "Bristol" Boarhound machine to ensuring that both pilot and gunner shall have a wide field of view. Dual control is provided with tail actuating gear and all moving parts are fitted with lubricators. Control surfaces are balanced to give light operation at all speeds and "Bristol"-Frise type ailerons, which have a very small yawing effect, ensure adequate control at stalling speed. The chassis is fitted with oleo legs with rubber in compression and the tail skid is of the quarter elliptic steel spring type with a torsion bar to provide freedom laterally, and a replacable rubbing pad. Plenty of space is available for the stowage of a comprehensive military load. The engine is the latest type "Bristol" Jupiter Series VI, and this is fitted with a complete exhaust ring and tail pipes in order that all exhaust gases are conveyed beyond the cockpit. Engine cowling can be detached very speedily and without the aid of tools, whilst a fireproof bulkhead has been fitted. The span of the machine is 44 ft. 9 in., length 30 ft. 7 in., and height 11 ft., whilst the track of the wheels is 6 ft. 6 in. The wings have a surface of 464 sq. ft., tail plane 28 sq. ft., two elevators 25 sq. ft., rudder 14 sq. ft., and fin 2.2 sq. ft. The weights are as follows—

| | |
|--|------------|
| Weight complete, empty, with Jupiter engine and tankage for 102 gallons of petrol and 9 gallons of oil ... | 2,440 lbs. |
| Additional structure to carry all items of equipment | 90 " |
| Fuel and oil—77 gals. petrol | 586 lbs. |
| 7 gals. oil | 70 lbs. |
| Crew | 656 " |
| Military Equipment (guns, ammunition wights, camera, electrical equipment, etc.) | 360 " |
| | 448 " |
| | 3,994 lbs. |

As to performance, the machine has a top speed of about 135 miles per hour and a landing speed in the neighbourhood of 50 miles per hour. The machine climbs at 5,000 ft. in 4½ minutes, to 10,000 ft. in 10 minutes and to 15,000 ft. in 18 minutes, service ceiling being 21,800 ft. and

absolute ceiling 23,600 ft. The machine has been found easily manœuvrable and quickly responsive to its controls and from the pilot's point of view its flying qualities have been very highly appreciated. Both machine and engine are of types which can be relied upon to give lengthy service without trouble.

The "Bristol" Lucifer School Machine.

The "Bristol" Lucifer School machine has established an enviable reputation as the most efficient type of aircraft which can be obtained to-day for general instructional purposes. It is, in the first place, a machine of exceptionally simple construction with practically nothing to require attention. The oleo spring undercarriage has proved itself of exceptional efficiency whilst the 120 h.p. "Bristol" Lucifer Series IV engine which is fitted is now very widely recognised as the simplest and most reliable engine of its power which can be obtained.

The "Bristol" Lucifer School machine is easy to fly, but at the same time it is exceedingly light on the controls and has very much the "feel" of a single-seater scout. As a result pupils who receive training on this type of aircraft are really turned out as efficient pilots. Experience in flying school work has proved that pupils qualify quite as quickly on this as on any other type of school machine but with the advantage that when moved on to more advanced types of fighter aircraft very little dual control instruction has been necessary.

In one flying school in which "Bristol" Lucifer School machines have been used as standard for nearly four years there has never been a single forced landing from engine trouble nor a mishap of any kind and this despite the fact that approximately 600 pupils have received training. The machines during this period have required very little attention and in point of fact have given service day after day throughout the entire period. Equally striking is the experience of the Chilean Air Force, who have adopted machines of this type for training purposes. A report recently received from the technical officer in charge of these machines touches upon this matter as follows—

"As far as machines and engines are concerned we cannot speak too highly of them. The machines are nice to fly, strong, easy to repair and will do everything asked of them. The engines seem to be the result of a lifetime's study on what is required for a training machine. Our people are simply mad over them. We have Lucifers working with over 70 hours' flying without even changing a plug. . . . Our consumption is very low compared with the rotaries for the same work. Per hour we are using about 20 litres of petrol (20 per cent. benzol) and about ¾ to one litre of oil."

In the history of instructional flying it would surely be difficult to bring forward two examples of all-round efficiency, economy and safety than has been demonstrated in these two instances.

THE BRISTOL AEROPLANE CO. LTD., FILTON, BRISTOL.

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Bristol



THE "BRISTOL" BOARHOUND.
(fitted with the "Bristol" Jupiter Radial Aircooled Engine,
Series VI).



THE "BRISTOL" LUCIFER SCHOOL MACHINE
(fitted with the "Bristol" Lucifer Aircooled Engine,
Series IV).

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



This photograph was taken during the Grosvenor Cup Air Race when the Westland Widgeon achieved the fastest time for the course—105.5 m.p.h. and the fastest individual lap—106.8 m.p.h.

The WESTLAND “WIDGEON”

FOR eleven years we have been designing and building aeroplanes, and to-day the reputation of Westland Aircraft for safety, speed and comfort is world-wide.

Our designs comprise all types from private single-seaters to large twin-engined bombing machines.

In these days road travel is anything but pleasant. By owning a light aeroplane you can recapture the joys of travel. We intend to publish shortly particulars of “Widgeon III,” a light passenger Monoplane which will be within reach of the man of moderate means. The

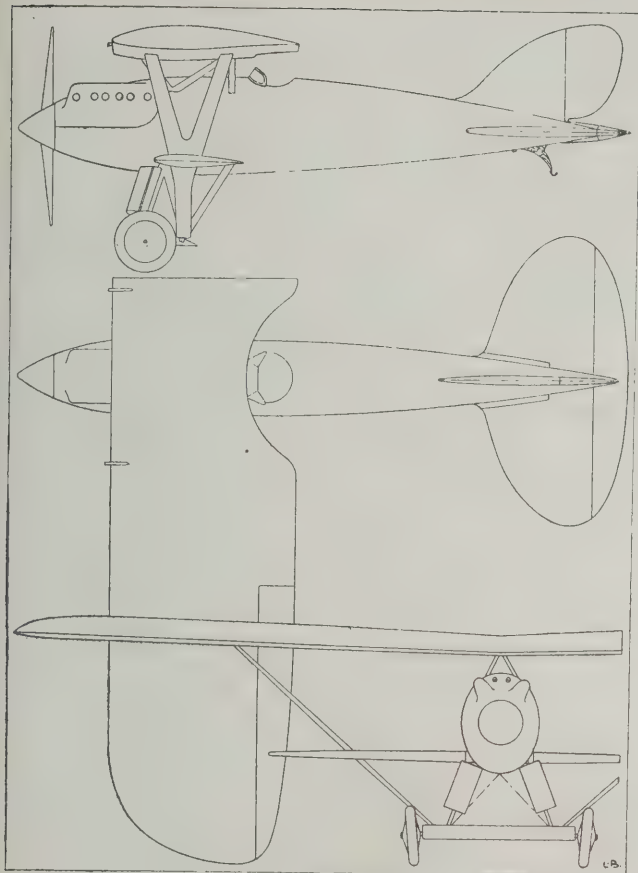
machine folds, and will go comfortably into an ordinary garage. Widgeon II is illustrated above and is a remarkably successful example of modern aircraft construction. The specification is given herewith.

SPECIFICATION.

| | | |
|---|----------------------|--|
| Leading Weights and Dimensions: | | |
| Weight, fully loaded ... | 1,150 lbs. | |
| Weight, light, without fuel and oil ... | 640 lbs. | |
| Fuel Capacity ... | 12 gallons. | |
| Useful load apart from fuel and oil ... | 380 lbs. | |
| Surface ... | 145 sq. ft. | |
| Span ... | 30 ft. 8 ins. | |
| Width, folded ... | 9 ft. 9 ins. | |
| Length ... | 20 ft. 5 ins. | |
| Petrol consumption ... | 20 Miles per gallon. | |

WESTLAND AIRCRAFT
WORKS
(Branch of Petters Limited),
YEOVIL, ENGLAND.

KINDLY MENTION “THE AEROPLANE” WHEN CORRESPONDING WITH ADVERTISERS.



The Nieuport Sesquiplan 42 C.1.

Pilot and observer sit in tandem behind the wings very close together, as in the majority of French military two-seaters, and neither of them seem to have a very good view. Otherwise the machine is a thoroughly businesslike affair.

The Potez 25.

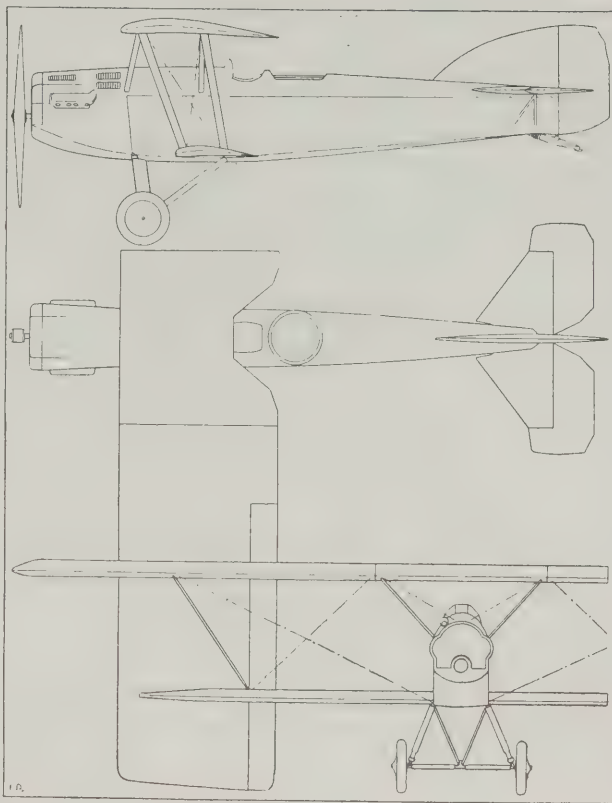
This is almost identical with the 25A.2, but has the observer's seat a little further back in the fuselage.

The Potez 28.

This is another machine of very similar type, form, and construction to the 25. It is the type of machine used on the non-stop flight from Paris to Basra made by the brothers Arrachart. It is exhibited fitted with the 500 h.p. Farman engine, but in the raid itself the 480 h.p. Renault was used.

SCHRECK.**F.B.A.21. H.M.T.6.**

M. Shreck, of F.B.A. fame, shows a flying-boat amphibian of the type which won the Grand Prix des Hydravions de



The Potez 25A.2.

Transport, 1925. It is a single-engined biplane with equal wings and a single row of struts on each side of the hull.

The hull is of the three-ply covered box type, with one deep step, and a tail which rises sharply behind the step. The amphibian gear is a normal V-type undercarriage hinged to the two spars of the lower wing and wound up or down by cables. In the down position the Vees lie close alongside the hull and are locked by a rotating locking gear projecting through the side of the hull.

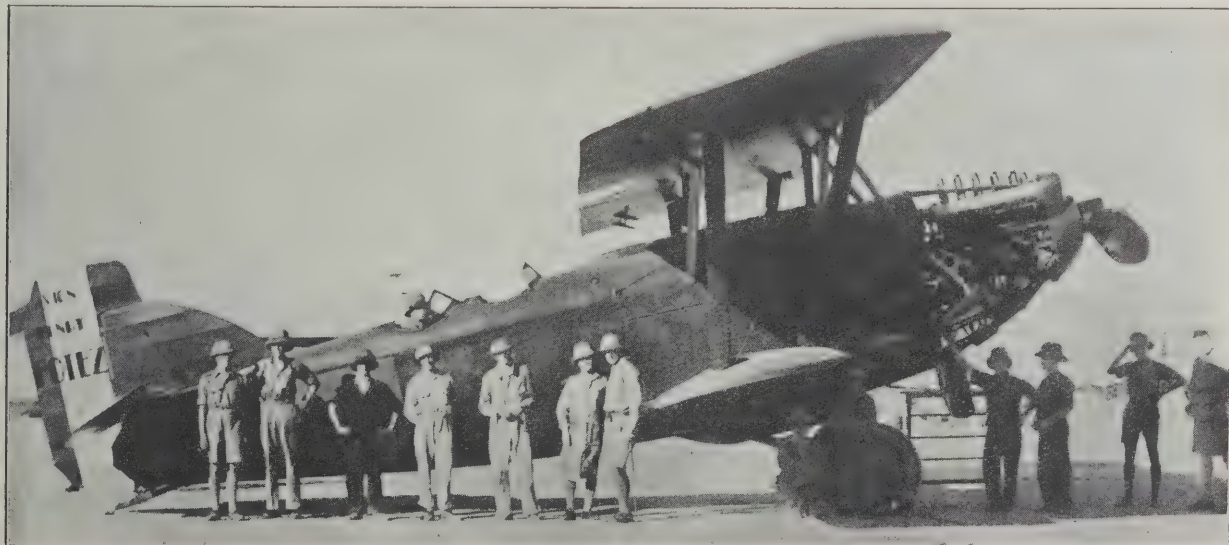
The engine—a 450 h.p. broad-arrow Hispano-Suiza engine—is carried in a very carefully streamlined egg by a multiplicity of struts which rather discounts the streamlining of the egg.

Passengers—to the number of four—or goods and mail, are carried in the bows of the hull.

S.E.C.M.**Amiot. 120 B.N.3.**

A single-engine night bomber, built entirely of duralumin except for the covering. The fuselage is of round tubes, and all joints are made by stamped duralumin plates, which embrace the tubes, and are rivetted together and to the tubes.

The machine is a large single-bay biplane, with a top



THE GRAND RAIDER.—The Potez 28 (Renault 480 h.p.) used on the Paris-Basra flight, seen here with officers of 84 Squadron, R.A.F. at Basra.

plane of much greater chord and somewhat greater span than the bottom.

The crew are seated well behind the wings, and a large space, presumably for bombing gear, is left vacant in the section of fuselage between the wings.

The engine is a Farman of 650 h.p., fitted with flame dampers on the exhaust pipes.

The Amiot Type 150.

This machine has not yet been built. The portion exhibited is the fuselage and centre section in skeleton form.

The type 150 is to be a three-engined civil monoplane, intended to carry fourteen passengers, crew of two, and fuel for a range of 1,000 km. (621 miles) at a cruising speed of 118 m.p.h.

The fuselage is of rectangular section, with tubular longerons. Over the front section the tubes are of steel, connected by rectangular transverse frames of pressed steel, which are sufficiently stiff to dispense with diagonal bulkhead wires, and give a free cabin space. Aft of this section duralumin tubes are used both for longerons and struts.

The wing centre section mounted above the fuselage is of very great thickness, and the construction is reminiscent of the Junkers methods. There are no spars; instead six large-diameter duralumin tubes are arranged, three at the top and three at the bottom of the wing profile, and these six tubes are tied together, both along the span and across the chord by a multiplicity of smaller diameter tubes.

This spar unit covers but about one-third of the total chord, instead of extending from leading to trailing edge, and does not inspire undue confidence in its capacity to resist torsional deflections.

Ribs are Warren girders of duralumin tube, apparently about $\frac{5}{8}$ in. diameter.

Two 500 h.p. Hispano-Suiza engines are mounted in the leading edge near each end of the centre section, and a third is carried in the nose of the fuselage.

The wing is to be a pure cantilever of something over 20 metres span, to carry a loaded weight of over 7 tons.

S.I.M.B.

The initials S.I.M.B. stand for *Société Industrielle des Métaux et du Bois*. It used to be known as Ferbois, and

produced Bernard machines designed by M. Hubert. The present exhibit is a cantilever sesquiplan with a pair of torsion-struts joining the end of the lower bit-of-a-plane to the main spars. It is derived from the machine which holds the World's Speed Record at 278 m.p.h.

It is constructed entirely of wood. The wings are built up of a number of box-sparlets tied together by a three-ply covering. The result is pretty, but does not convince one of its strength. And it must be expensive.

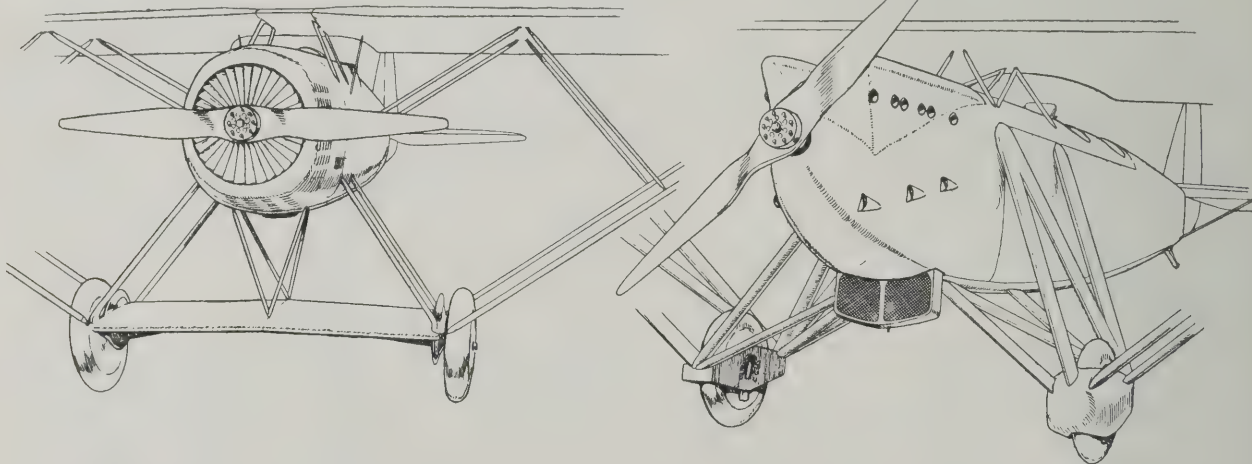
S.R.A.P.

The simple initials S.R.A.P. stand for *La Société pour la Reproduction des Avions Prototypes*. The chief of the firm is M. Béchereau, who, in league with Mr. Frederick Koolhoven, produced the wonderful Deperdussins of 1912-13, one of which, in 1913, was the first vehicle in the World to cover 120 miles in an hour. Since then M. Béchereau has been responsible for the early Spads. The machine which is shown recalls both the old Deps. and the Spads, but one does not like it as well as either of them.

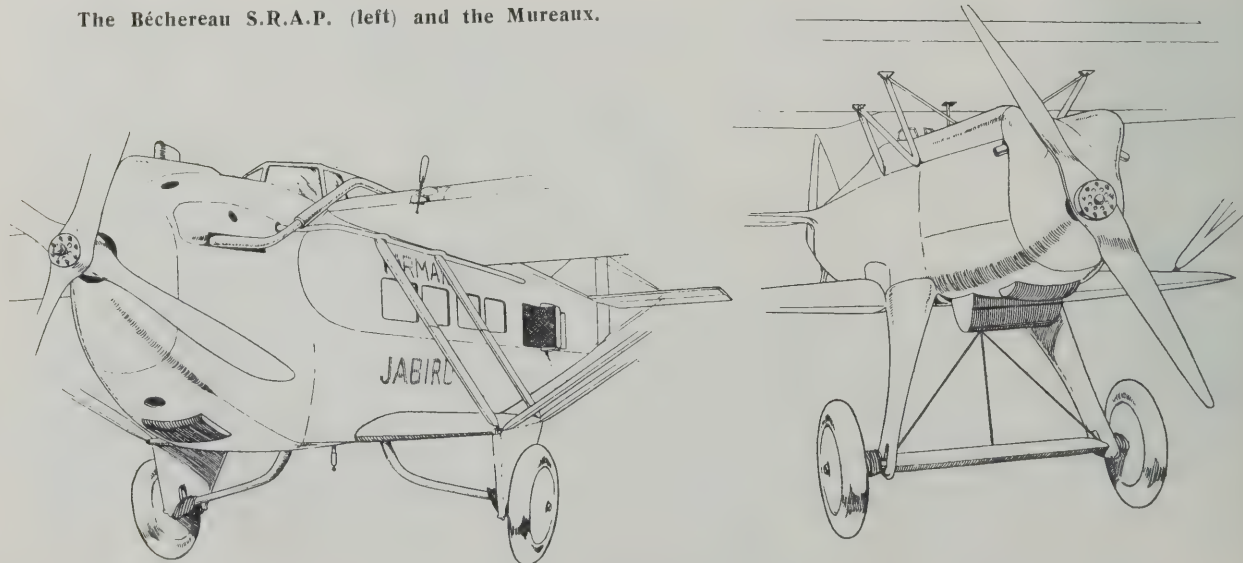
It is a parasol monoplane with a 500 h.p. Salmson radial water-cooled engine with an enormous radiator in the nose, and a Levasseur-Reed airscrew. The most remarkable thing about it is that, including undercarriage struts and the two main wing struts, one to each spar, and the cross-bracing struts and the centre-section struts, M. Béchereau has managed to get in twelve struts a side, making altogether twenty-four struts for a monoplane. Again one feels impelled to ask why not make a short-span biplane instead?

The tail plane looks inadequate, but the fin and rudder are almost unbelievable. M. Béchereau's 1913 designs were more adequately provided in this respect.

There is exhibited upon the stand the body of a passenger-carrying machine. This has a fuselage fatter and tubbier than that of the Vickers Vulcan, built more or less on similar lines to that body—that is, on box rings covered with ply-wood—but also very abundantly braced with streamline wires. This body is intended to have heavily back-staggered biplane wings, with a section rather reminiscent of the DeH.6 "skyhook."



The Béchereau S.R.A.P. (left) and the Mureaux.



STUDIES IN NOSES.—The Farman Jabiru (or Ventre-à-Terre) and the S.I.M.B. (Bernard) (right).

VILLIERS.

Well over a year ago the French technical press announced that a firm of the name of F. Villiers, of 12, Rue de Villejust, Paris, was developing some aircraft for the French Government. So far four types have emanated from this firm's factory and all have performed well. Two are shown.

In view of the neglect of marine aviation in France very few firms have chosen to concentrate exclusively on marine aircraft and that Villiers should attempt to do so so early in their life and that their first four types should have shown such promise makes the establishment of the firm of considerable interest.

Their first machine, the Villiers C.2.F. is a two-seater *avion marin* and was produced to compete in the *Concours des Avions Marins* organised by the French Navy early in 1925. The C.2.F. was adjudged first in this competition, and a production order was placed with the firm for a number of aircraft of this type.

Before describing this machine it may be interesting to outline the regulations of the *Concours des Avions Marins*. The regulations called for a two-seater pursuit aeroplane to carry four machine guns, two fixed to fire forward and two on a movable mounting over the observer's cockpit, sufficient fuel for 2½ hours, a useful load of 350 kgs, and to possess a top speed of at least 200 km.p.h. at 500 m., a climb to 6,000 m. in less than 40 mins., and the manoeuvrability of a single-seater scout.

In addition the overall span was limited to 13 m. in order to allow for storage in aircraft-carriers and the aircraft were to be fitted with gear for deck-landing, watertight fuselages to permit alighting in the sea, dropable undercarriages, hauling and lifting gear, etc.

The Villiers C.2.F. is a tractor "sesquiplan." The fuselage is watertight throughout its length and in cross section has "tumble-home" sides and a Vee bottom. The framework (that is, formers, strakes, and keel) are of ash, with birch plywood covering.

The engine, either the 500 h.p. Hispano-Suiza or the 450 h.p. Lorraine-Dietrich, is mounted on a steel-tube framework and the whole is completely encowled.

The main planes are of normal wood and fabric construction. The top plane, which is flat, is mounted on an inverted Vee cabane, very high above the fuselage. The bottom planes are fitted half-way up the sides of the fuselage along the line of flotation and are equipped with two small wing-tip floats at the tips. Long narrow ailerons are fitted to the top plane only.

Two strut-type Lamblin radiators are mounted on the leading edge of the bottom planes close in to the fuselage.

The undercarriage consists of two steel-tube Vees, which are braced transversely by two further tube Vees, and the whole is dropable for alighting in the sea.

The tail unit is quite normal.

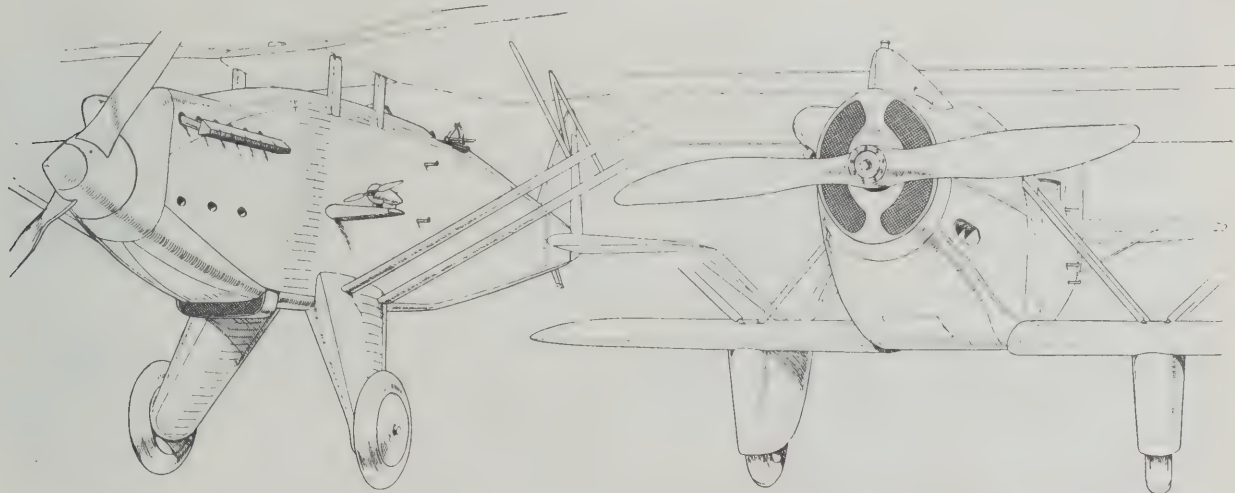
In the *Concours des Avions Marins* the C.2.F. put up the following official performances:—

Climb to 6,000 m., 28 mins. 38 secs. with civilian pilot and 28 mins. 49 secs. with naval test pilot; maximum speed, 214 km.p.h. with civil pilot and 212 km.p.h. with naval pilot; minimum speed, 82 km.p.h.; speed range, 130 km.p.h.

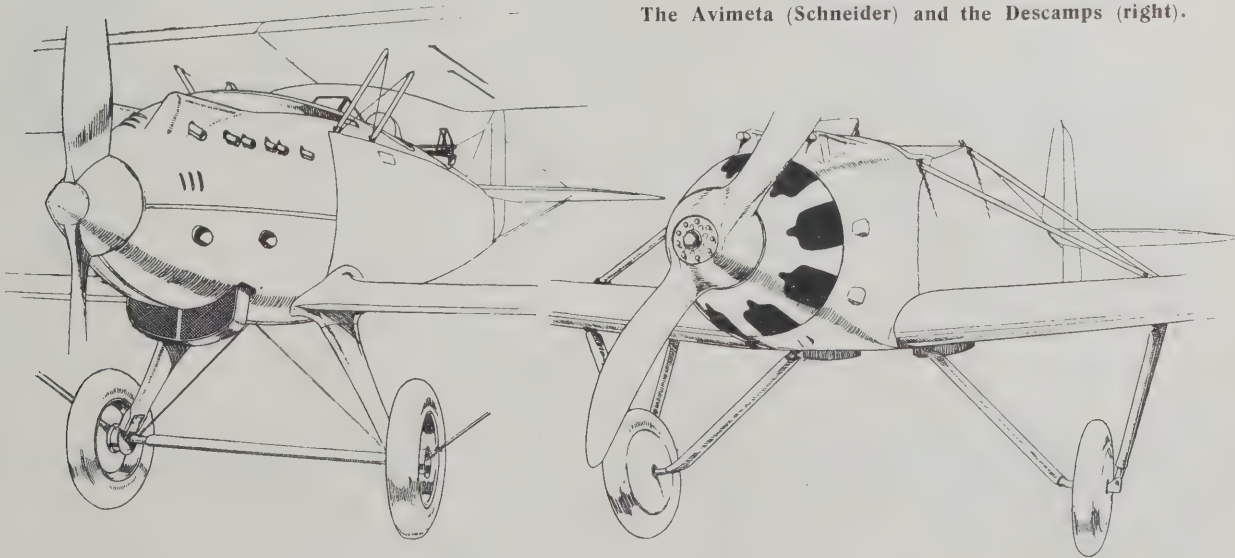
The result shown by flight-test proved that this machine possessed all the qualities of flight, manoeuvrability and performance of the corresponding type of land machine, and that in cases of emergency, when fighting over the sea, the undercarriage can be dropped, thus giving a considerable gain in performance.

The second machine known as the type V appears as a two-seat night fighter, but is derived from a float seaplane originally produced for the French Navy.

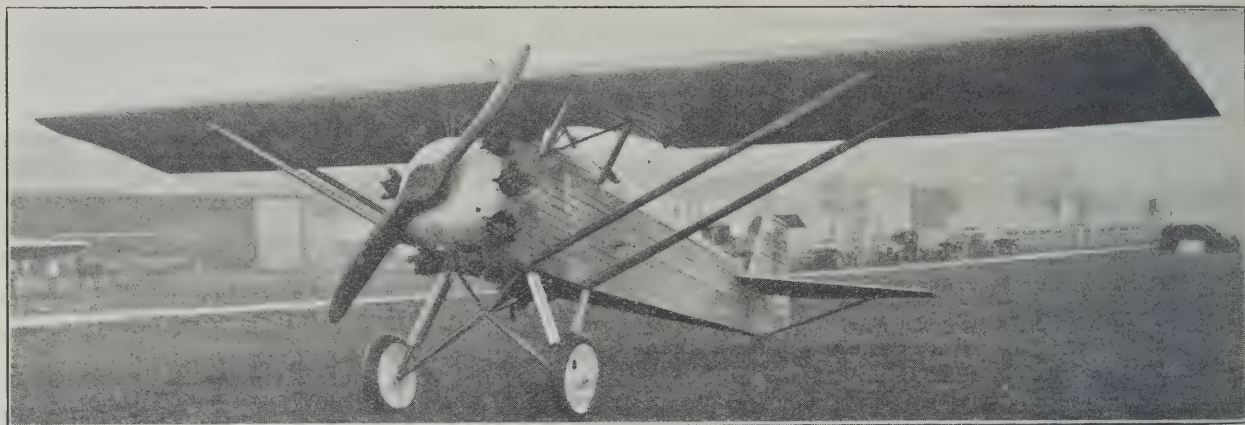
It is a sesquiplan whose lower wing is of very respectable span but very small chord, with one I-type interplane strut on each side, a very clean oval-section body and an undercarriage with the Vees on each side faired into one single streamline.



The Avimeta (Schneider) and the Descamps (right).



STUDIES IN NOSES.—The Levasseur (left) and the Koolhoven.



A POPULAR FIGHTER.—The Wibault 7 C.1 (Jupiter).

The body is of three-ply and the wings of normal timber construction, and a removable duralumin engine mounting is provided, presumably in order that alternative engines may be interchanged.

The military equipment includes two synchronised Vickers guns firing forward, twin Lewis guns on a Scarff ring aft, lighting equipment, electric heating for crew and guns, landing lights, bomb gears and sending and receiving wireless—a total military load of over 1,000 lbs.

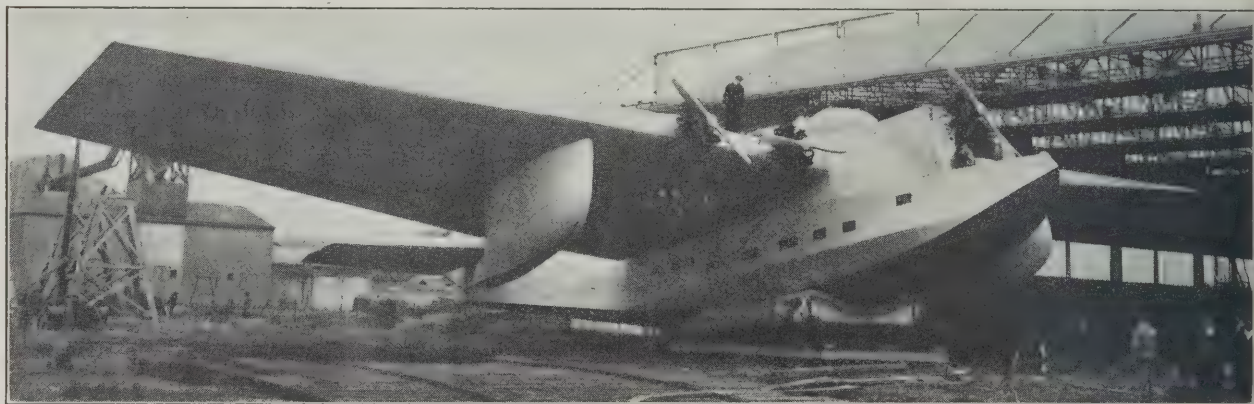
The engine normally fitted is the 450 h.p. Lorraine-Dietrich, cooled by Lamblin radiators attached to the lower surface of the body. Petrol is pumped to the carburettors from tanks in the bottom of the fuselage which are fitted with release gears so that they may be dropped bodily.

WIBAULT. The type 7 C.1.

On the stand of the *Aviation Militaire* there is exhibited a specimen of the Wibault 7C.1 single-seat fighter, with the Gnôme-Rhône Jupiter engine. Except for the use of this brand of Jupiter instead of the Bristol Jupiter VI, this machine is identical with that built by Vickers, Ltd., and described in *THE AEROPLANE* a few months back.

It is a rigid strut-braced monoplane, built of duralumin except for the use of steel for struts and main fittings. Both body and wings are sheet duralumin covered, and in the case of the wings the skin is an essential stress carrying member. The body has a complete framing which does not depend entirely upon the skin, though this latter does contribute very materially to the strength of the whole.

The undercarriage is of the oleo type (*licence* Vickers).



DOMINATING THE SHOW.—The Penhoet Monoplane Flying-Boat (five Jupiters), which, except for the Fairy, Titania and Atalanta, is the biggest seaplane in the World. It is too big for the Grand Palais, but a photograph of it of "grandeur naturelle" dominates the Show from a position over the entrance.

THE R.A.C. MONTHLY HOUSE DINNER.

The Monthly House Dinner of the Royal Aero Club, fixed for Wednesday of this week, Dec. 8, has been postponed until next Wednesday, Dec. 15.

The subject for discussion will be "Airships," opened by Mr. Griffith Brewer. Lord Thomson will be in the chair, and Admiral Murray Sueter, M.P., Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Group Captain Fellowes, R.A.F., and Major Scott have all promised to be present.

Members wishing to be there are asked to let the Secretary know as soon as possible, as the number of seats is limited to 60.

THE AERONAUTICAL ENGINEERS.

The next meeting of the Institution of Aeronautical Engineers will take place on Thursday, Dec. 9, at 6.30 p.m., at the Junior Institution of Engineers, 39, Victoria Street, S.W.1.

Captain F. Entwistle, B.Sc., who is in charge of the Aviation Department of the Meteorological Office, will read a paper on "Wind Structure in Relation to Air Navigation," and the chair will be taken by Mr. W. L. Cowley, A.R.C.Sc., D.I.C., a member of the Council of the Institution, who is on the staff of the Aerodynamics Department of the National Physical Laboratory.

Capt. Entwistle, who by his good work during the gliding meeting at Itford in 1922 earned the nickname of "the gust-guesser," is well worth hearing, so his audience should be large.

THE ROYAL AERONAUTICAL SOCIETY.

The last lecture of the first half of the Sixty-Second Session will be held on Thursday, Dec. 16, at 6.30 p.m., at the Royal Society of Arts, John Street, Adelphi, W.C.2, when Wing Cdr. C. Breese, A.F.C., of the Technical Training Section of the School of Technical Training (Apprentices), at Halton, will read a paper on "The Training of Aircraft Apprentices." Col. the Master of Sempill, A.F.C., A.F.R.Ae.S., Chairman of the Society, will preside.

COMMERCIAL AVIATION IN INDIA.

The Delhi correspondent of *The Morning Post* in a message dated Nov. 30 states:—

A memorandum of the Indian Air Board, published yesterday, urges a more forward policy in air navigation. The Board sees a danger of the whole aerial transportation in India falling into the hands of foreign firms. The Indian Government must subsidise commercial air services.

A beginning must be made with a Calcutta—Rangoon service, which offers the best hope of success. Companies tendering for this service must fulfil the conditions of being registered in India with rupee capital and of being prepared to afford facilities for the training and employment of Indians, and the Government should for its part construct a base and charge a housing fee.

CZECHOSLOVAK AIR TRANSPORT.

The Times of Dec. 2 states:—

A Czechoslovak Air Transport Company has been formed in Prague with a capital of 8,000,000 crowns [about £50,000]. It will operate international air lines, the first of which will be on the route Töplitz—Prague—Brünn—Bratislava—Zagreb—Trieste.



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Length Overall...50'-7" Span (Spread)...86'-6" Unladen Weight...9,900 lbs.
Height Overall...17'-3" Span (Folded)...44'-3" Useful Load...6,850 lbs.
Approx. Full Speed...108 m.p.h. Minimum Speed...46 m.p.h.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIRCRAFT AT THE SALON DE L'AERONAUTIQUE, PARIS—1926.

| Constructor. | Type. | Engine. | Purpose. | Span. | Length. | Height. | Wing Area. | Weight Empty. | Weight Loaded. | Useful Load. | Wing Loading. | Power Loading. | Speed Max. | Climb. | Ceiling. |
|---------------------------------------|-------------|---|---|---------|---------|---------|---|------------------------|-------------------------|------------------------|---|---------------------------------|-----------------------------|-----------------------|-----------------------|
| AERO TOVARNA LETADEL, PRAHA-VYSOCHANY | 11 | 240 h.p. Breitfeld Danek Perun | 2 Seat Reconnaissance | 39' 0" | 27' 4" | 10' 2" | 392 ft. ² 36.5 m. ² | 2250 lbs. 1027 kgs. | 3375 lbs. 1534 kgs. | 705 lbs. 320 kgs. | 8.6 lbs./ft. ² 42 kgs./m. ² | 14 lbs./h.p. 6.4 kgs./h.p. | 133 m.p.h. 215 km.p.h. | 4000 m. in 12' 50" | 25000 ft. 7600 m. |
| AERO TOVARNA LETADEL, PRAHA-VYSOCHANY | 30 | 450 h.p. Lorraine Dietrich | 2 Seat Reconnaissance | 48' 6" | 29' 6" | — | 494 ft. ² 46 m. ² | 2545 lbs. 1200 kgs. | 5075 lbs. 2300 kgs. | 2200 lbs. 1000 kgs. | 10.2 lbs./ft. ² 50 kgs./m. ² | 11.2 lbs./h.p. 5.1 kgs./h.p. | 136 m.p.h. 220 km.p.h. | — | — |
| ARMSTRONG WHITWORTH | Ajax | 385 h.p. Jaguar | 2 Seat Fighter & Reconnaissance Biplane | 39' 4½" | 27' 3" | 10' 8" | 384 ft. ² | 2240 lbs. 1018 kgs. | — | 880 lbs. 400 kgs. | — | — | 140 m.p.h. 225 km.p.h. | 5000 m. in 24' 0" | 20000 ft. 6000 m. |
| AVIA | B.H.11 | 60 h.p. Walter | 2 Seat Tourer Monoplane | 31' 11" | 21' 10" | 8' 4" | 146 ft. ² 13.6 m. ² | 775 lbs. 352 kgs. | 1275 lbs. 580 kgs. | 503 lbs. 228 kgs. | 8.7 lbs./ft. ² 42.5 kgs./m. ² | 22 lbs./h.p. 9.7 kgs./h.p. | 99 m.p.h. 160 km.p.h. | 2000 m. in 12' 0" | 13000 ft. 4000 m. |
| AVIA | B.H.26 | 420 h.p. Jupiter | 2 Seat Fighter Biplane | 35' 6" | 28' 10" | 9' 11" | 336 ft. ² 31.32 m. ² | 2340 lbs. 1060 kgs. | 3750 lbs. 1700 kgs. | — | 11 lbs./ft. ² 53 kgs./m. ² | 8.8 lbs./h.p. 4 kgs./h.p. | 149 m.p.h. 240 km.p.h. | 5000 m. in 20' 0" | 23000 ft. 7000 m. |
| AVIMETA | AVM.88 | 500 h.p. Hispano Suiza | 2 Seat Fighter Monoplane | 54' 9" | 32' 0" | 11' 7" | 430 ft. ² 40 m. ² | 3420 lbs. 1550 kgs. | 5290 lbs. 2400 kgs. | 1184 lbs. 540 kgs. | 12.3 lbs./ft. ² 60 kgs./m. ² | 10.6 lbs./h.p. 4.8 kgs./h.p. | 149 m.p.h. 240 km.p.h. | 5000 m. in 16' | 24600 ft. 7500 m. |
| BESSON, MARCEL | M.B.35 | 120 h.p. Salmson | 2 Seat Submarine Monoplane Seaplane | 9.85 m. | 7 m. | 2.4 m. | 16.5 m. ² | — | 765 kgs. | — | 46.4 kgs./m. ² | 6.37 kgs./h.p. | 163 km.p.h. | 2000 m. in 12' 0" | 4200 m. |
| BESSON, MARCEL | Transport | 3-420 h.p. Jupiter | Commercial Monoplane Seaplane | 25 m. | — | — | 130 m. ² | — | 7500 kgs. | — | — | — | 180 km.p.h. | — | — |
| BLERIOT AERONAUTIQUE | Spad 61 | 480 h.p. Lorraine Dietrich (supercharged) | 1 Seat Fighter (Height Record) Biplane | 38' 3" | 23' 6" | 10' 6" | 398 ft. ² 37 m. ² | — | 3245 lbs. 1522 kgs. | 199 lbs. 90 kgs. | 8.2 lbs./ft. ² 40 kgs./m. ² | 7.5 lbs./h.p. 3.4 kgs./h.p. | 383 km.p.h. @ 5,000 m. | — | 40822 ft. 12442 m. |
| BLERIOT AERONAUTIQUE | Bleriot 165 | 2-450 h.p. Jupiter | 16 Pass. Civil Biplane | 75' 6" | 49' 3" | 14' 9" | 1280 ft. ² 119 m. ² | — | 12000 lbs. 5450 kgs. | 3312 lbs. 1600 kgs. | 9.4 lbs./ft. ² 45.8 kgs./m. ² | 13.2 lbs./h.p. 6 kgs./h.p. | 112 m.p.h. 180 km.p.h. | — | — |
| BREGUET | XIX G.R | 500 h.p. Hispano Suiza | 2 Seat Biplane | — | 24' 7" | 9' 6" | 570 ft. ² 53 m. ² | 3345 lbs. 1511 kgs. | 9161 lbs. 4157 kgs. | — | 17 lbs./ft. ² 81 kgs./m. ² | — | — | — | — |
| BREGUET | XIX | 450 h.p. Lorraine Dietrich | 2 Seat Fighter Biplane Seaplane | 48' 8" | 37' 9" | 13' 1" | 538 ft. ² 50 m. ² | 2980 lbs. 1350 kgs. | 5410 lbs. 2450 kgs. | 1655 lbs. 750 kgs. | 10.4 lbs./ft. ² 49 kgs./m. ² | 12 lbs./h.p. 5.4 kgs./h.p. | 124 m.p.h. 200 km.p.h. | 3000 m. in 18' 25" | 18500 ft. 5600 m. |
| BREGUET | XXVI.T | 420 h.p. Jupiter | 6 Seat Civil Biplane | — | — | — | 582 ft. ² 55 m. ² | — | 6225 lbs. 2825 kgs. | — | 10.7 lbs./ft. ² 51.5 kgs./m. ² | 15 lbs./h.p. 6.7 kgs./h.p. | 127 m.p.h. 204 km.p.h. | — | 15750 ft. 4800 m. |
| CAUDRON | C.161 | 60 h.p. Salmson | 2 Seat Training | 29' 7" | 21' 2" | 7' 11" | 215 ft. ² 20 m. ² | 795 lbs. 361 kgs. | 1280 lbs. 584 kgs. | 388 lbs. 176 kgs. | 6.0 lbs./ft. ² 29.3 kgs./m. ² | 20 lbs./h.p. 9.7 kgs./h.p. | 88 m.p.h. 142 km.p.h. | — | 10500 ft. 3200 m. |
| CAUDRON | C.109 | 40 h.p. Salmson | 2 Seat Touring | 37' 9" | 20' 2" | 7' 5" | 215 ft. ² 20 m. ² | 724 lbs. 328 kgs. | 1220 lbs. 555 kgs. | 388 lbs. 175 kgs. | 5.7 lbs./ft. ² 27.7 kgs./m. ² | 30 lbs./h.p. 14 kgs./h.p. | 76 m.p.h. 122.5 km.p.h. | 2000 m. in 45' 39" | — |
| CAUDRON | C.104 G.R. | 420 h.p. Jupiter | 2 Seat Fighter Biplane | 47' 9" | 31' 2" | 10' 9" | 474 ft. ² 44 m. ² | 3030 lbs. 1377 kgs. | 4320 lbs. 1965 kgs. | 1200 lbs. 545 kgs. | 9.1 lbs./ft. ² 43.7 kgs./m. ² | 10.2 lbs./h.p. 4.7 kgs./h.p. | 130 m.p.h. 209.5 km.p.h. | 2000 m. in 7' 27" | 21000 ft. 6375 m. |
| DESCAMPS | A.2 | 450 h.p. Lorraine Dietrich | 2 Seat Reconnaissance Biplane | 14.5 m. | 9.35 m. | 3.35 m. | 42 m. ² | 1238 kgs. | 2046 kgs. | 520 kgs. | 49.67 kgs./m. ² | 4.54 kgs./h.p. | 230 km.p.h. | 5000 m. in 24' 53" | — |

| | BACALAN | Jupiter | Fight Model | Sz V | H.I. | — | 1000 ft. ² 93 m. ² | 6840 lbs. 3150 kgs. | 12320 lbs. 5600 kgs. | 12.3 lbs./ft. ² 60 kgs./m. ² | 14.6 lbs./h.p. 6.7 kgs./h.p. | 121 m.p.h. 195 km p.h. | 19700 ft. 6000 m. |
|----------------------------|----------|---|--|--------------------|--------------------|-------------------|--|------------------------|-------------------------|---|----------------------------------|----------------------------|----------------------|
| FARMAN | F.170 | 500 h.p. Farman | 8 Seat Commercial Monoplane | 25 m. 16.1 m. | 38' 6" 11.75 m. | 10' 6" 3.2 m. | 565 ft. ² 52.5 m. ² | 4450 lbs. 2018 kgs. | 7320 lbs. 3318 kgs. | 13.3 lbs./ft. ² 63 kgs./m. ² | 14.6 lbs./h.p. 6.6 kgs./h.p. | 126 m.p.h. 203 km.p.h. | 14000 ft. 4300 m. |
| FIAT | C.R.20 | 410 h.p. Fiat A.20 | 1 Seat Fighter Biplane | — | — | — | 25.5 m. ² | 935 kgs. | — | — | — | 278 km.p.h. | 8500 m. |
| FOKKER | CV-D | 450 h.p. Hispano Suiza (610 h.p.) | 2 Seat Fighter Sesquiplan | 41' 0" 12.5 m. | 31' 3" 9.53 m. | 10' 10" 3.3 m. | 310 ft. ² 28.8 m. ² | 2860 lbs. 1290 kgs. | 4180 lbs. 1890 kgs. | 13.5 lbs./ft. ² 65.5 kgs./m. ² | 6.85 lbs./h.p. 3.1 kgs./h.p. | 158 m.p.h. 255 km.p.h. | 22000 ft. 6700 m. |
| FOKKER | F.VII-3M | 3-200 h.p. Lynx | 8 Seat Commercial Monoplane | 63' 4" 19.3 m. | 47' 10" 14.6 m. | 12' 10" 3.9 m. | 625 ft. ² 58.5 m. ² | 4730 lbs. 2150 kgs. | 7950 lbs. 3600 kgs. | 12.7 lbs./ft. ² 61.5 kgs./m. ² | 13.2 lbs./h.p. 6.6 kgs./h.p. | 115 m.p.h. 185 km.p.h. | 15600 ft. 4700 m. |
| HANRIOT | H.35 | 180 h.p. Hispano Suiza | 2 Seat Training Monoplane | 37' 5" 11.4 m. | 24' 6" 7.47 m. | 9' 1" 2.75 m. | 237 ft. ² 22 m. ² | 1620 lbs. 750 kgs. | 2100 lbs. 950 kgs. | 8.8 lbs./ft. ² 43 kgs./m. ² | 11.6 lbs./h.p. 5.3 kgs./h.p. | 128 m.p.h. 207 km.p.h. | 21500 ft. 6500 m. |
| HANRIOT | H.41 | 120 h.p. Salmonson | 2 Seat Training Biplane Seaplane | 33' 8" 10.26 m. | 26' 3" 8 m. | — | 375 ft. ² 34.9 m. ² | 1600 lbs. 725 kgs. | 2204 lbs. 1000 kgs. | 5.9 lbs./ft. ² 28 kgs./m. ² | 17 lbs./h.p. 7.7 kgs./h.p. | 75 m.p.h. 120 km.p.h. | — |
| HANRIOT | H.14S. | 80 h.p. Le Rhone | 2 seat Ambulance Biplane | 33' 8" 10.26 m. | 23' 7" 7.25 m. | 10' 0" 3.05 m. | 375 ft. ² 34.9 m. ² | 1180 lbs. 535 kgs. | 1740 lbs. 790 kgs. | 4.7 lbs./ft. ² 22.6 kgs./m. ² | 22 lbs./h.p. 9.9 kgs./h.p. | 69 m.p.h. 111.5 km p.h. | 12500 ft. 3850 m. |
| KOOLHOVEN | F.K. 35 | 450 h.p. Jupiter | 2 Seat Fighter Mono or Biplane | 34' 5" 10.5 m. | 28' 2" 8.6 m. | — | — | 1970 lbs. 895 kgs. | 3450 lbs. 1565 kgs. | 7.7 lbs./h.p. 3.5 kgs./h.p. | 7.7 lbs./h.p. @ 10,000 ft. | 162 m.p.h. | — |
| LETOV | S.16 | 450 h.p. Lorraine Dietrich | 2 Seat Reconnaissance Biplane | 15.5 m. | 9.2 m. | — | 47 m. ² | 1200 kgs. | 2250 kgs. | — | — | 217 km.p.h. | 6500 m. |
| LETOV | S.18 | 60 h.p.- Walter | 2 Seat Training Biplane | 11 m. | 7.2 m. | 2.9 m. | 22 m. ² | — | 1450 kgs. | — | — | 240 km.p.h. | 8500 m. |
| LEVASSEUR, PIERRE | — | 450 h.p. Lorraine Dietrich | 3 Seat "Marin" Biplane | 47' 10" 14.6 m. | 31' 10" 9.7 m. | 12' 10" 3.9 m. | 645 ft. ² 60 m. ² | 3420 lbs. 1550 kgs. | 5290 lbs. 2400 kgs. | 8.2 lbs./ft. ² 40 kgs./m. ² | 11.7 lbs./h.p. 5.25 kgs./h.p. | 115 m.p.h. 185 km.p.h. | 18000 ft. 5500 m. |
| LEVASSBUR, PIERRE | 6 C.2 | 500 h.p. Hispano Suiza | 2 Seat Fighter Biplane | 12.2 m. | 8.75 m. | 3.1 m. | 40 m. ² | 1200 kgs. | 1986 kgs. | 50 kgs./m. ² | 4 kgs./h.p. | 215 km.p.h. @ 5000 m. | 7500 m. |
| LEVASSBUR, PIERRE | 7.T | 420 h.p. Jupiter | 6 Seat Civil Biplane | 47' 10" 14.6 m. | 32' 10" 10 m. | 12' 8" 3.85 m. | 645 ft. ² 60 m. ² | 3085 lbs. 1400 kgs. | 5620 lbs. 2550 kgs. | 8.7 lbs./ft. ² 42.5 kgs./m. ² | 13.4 lbs./h.p. 6 kgs./h.p. | 112 m.p.h. 180 km.p.h. | — |
| LOIRE ET OLIVIER | LEO 21 | 2-420 h.p. Jupiter | 12 Seat Commercial Biplane | 74' 8" 22.76 m. | 50' 7" 15.4 m. | 14' 1" 4.3 m. | 1140 ft. ² 106.5 m. ² | 5930 lbs. 2690 kgs. | 12000 lbs. 5500 kgs. | 10.5 lbs./ft. ² 51.6 kgs./m. ² | 14.3 lbs./h.p. 6.5 kgs./h.p. | 119 m.p.h. 192 km.p.h. | — |
| LOIRE ET OLIVIER | LEO 190 | 420 h.p. Jupiter | 6 Seat Commercial Flying Boat | 52' 6" 16 m. | 41' 0" 12.5 m. | 13' 5" 4.1 m. | 690 ft. ² 64.2 m. ² | 3740 lbs. 1700 kgs. | 7050 lbs. 3200 kgs. | 10.2 lbs./ft. ² 9.9 kgs./m. ² | 16.8 lbs./h.p. 7.6 kgs./h.p. | 105 m.p.h. 170 km.p.h. | — |
| LOIRE-GOURDOU- LESEURRE | 32 C.1 | 420 h.p. Jupiter | 1 Seat Fighter Monoplane | 12.2 m. | 7.55 m. | 2.95 m. | 25 m. ² | 963 kgs. | 1370 kgs. | — | — | 250 km.p.h. | 9750 m. |
| LOIRE-GOURDOU- LESEURRE | 33 C.1 | 480 h.p. Renault | 1 Seat Fighter Monoplane | 12.2 m. | 7.55 m. | 2.95 m. | 25 m. ² | — | — | — | — | — | — |

AIRCRAFT AT THE SALON DE L'AERONAUTIQUE, PARIS—1926—Continued.

| Constructor. | Type. | Engine. | Purpose. | Span. | Length. | Height. | Wing Area. | Weight Empty. | Weight Loaded. | Useful Load. | Wing Loading. | Power Loading. | Speed Max. | Climb. | Ceiling. |
|--------------------------|--------------------|----------------------------|-------------------------------|--------------------|-------------------|-------------------|---|------------------------|-------------------------|-----------------------|---|----------------------------------|--|-----------------------|---|
| MORANE SAULNIER | 35 E.p.2 | 80 h.p. Le Rhone | 2 Seat Training Monoplane | 34' 8" 10.56 m. | 22' 3" 6.76 m. | 11' 10" 3.6 m. | 194 ft. ² 18 m. ² | 1000 lbs. 450 kgs. | 1542 lbs. 700 kgs. | 375 lbs. 170 kgs. | 8.0 lbs./ft. ² 38.9 kgs./m. ² | 19.3 lbs./h.p. 8.75 kgs./h.p. | — | — | — |
| MORANE SAULNIER | 129 E.T.2 | 180 h.p. Hispano Suiza | 2 Seat Training Monoplane | 35' 1" 10.7 m. | 23' 1" 7.04 m. | 8' 11" 2.71 m. | 212 ft. ² 19.7 m. ² | 1630 lbs. 740 kgs. | 2310 lbs. 1045 kgs. | 397 lbs. 180 kgs. | 10.8 lbs./ft. ² 53 kgs./m. ² | 12.1 lbs./h.p. 5.5 kgs./h.p. | — | — | — |
| MORANE SAULNIER | 132 | 120 h.p. Salmson | 2 Seat Touring Monoplane | 35' 1" 10.7 m. | 22' 7" 6.86 m. | 8' 11" 2.72 m. | 212 ft. ² 19.7 m. ² | 1445 lbs. 655 kgs. | 2050 lbs. 930 kgs. | 375 lbs. 170 kgs. | 9.7 lbs./ft. ² 47.2 kgs./m. ² | 17 lbs./h.p. 7.7 kgs./h.p. | — | — | — |
| MUREAUX, ATELIERS DES | 3.C.1. | 500 h.p. Salmson | 2 Seat Fighter Monoplane | 15 m. | 8.45 m. | 3.1 m. | 32.5 m. ² | — | 2068 kgs. | 520 kgs. | — | — | 245 km.p.h. | — | 8600 m. |
| NIEUPORT-ASTRA | Nieuport Delage 42 | 500 h.p. Hispano Suiza | 1 Seat Fighter Sesquiplan | 39' 5" 12.0 m. | 24' 7" 7.5 m. | 9' 10" 3 m. | 336 ft. ² 31.25 m. ² | 3060 lbs. 1379 kgs. | 3940 lbs. 1808 kgs. | 355 lbs. 161 kgs. | 11.7 lbs./ft. ² 58 kgs./m. ² | 8.0 lbs./h.p. 3.62 kgs./h.p. | 266 km.p.h. | 5000 m. in 13' 0" | 26100 ft. 8000 m. |
| NIEUPORT-ASTRA | Nieuport Delage 48 | 400 h.p. Hispano Suiza | 1 Seat Fighter Monoplane | 32' 10" 10.0 m. | 21' 0" 6.4 m. | 2.78 m. | 207 ft. ² 19.28 m. ² | 2280 lbs. 1032 kgs. | 2832 lbs. 1290 kgs. | 216 lbs. 98 kgs. | 13.6 lbs./ft. ² 66.6 kgs./m. ² | 7.0 lbs./h.p. 3.275 kgs./h.p. | 273 km.p.h. | 5000 m. in 16' 16" | — |
| POTEZ | 25 A2 | 500 h.p. Hispano Suiza | 2 Seat Reconnaissance Biplane | 46' 4" 14.0 m. | 29' 7" 9.0 m. | 11' 6" 3.5 m. | 500 ft. ² 46.7 m. ² | 2670 lbs. 1210 kgs. | 4410 lbs. 1998 kgs. | 1100 lbs. 500 kgs. | 8.8 lbs./ft. ² 43 kgs./m. ² | 8.8 lbs./h.p. 4 kgs./h.p. | 143 m.p.h. 24500 m. 230 km.p.h. | 5000 m. in 18' 0" | 24500 ft. 7500 m. |
| POTEZ | 25 G.R. | 450 h.p. Lorraine Dietrich | Biplane | 46' 4" 14.0 m. | 29' 7" 9.0 m. | 11' 6" 3.5 m. | 500 ft. ² 46.7 m. ² | 2690 lbs. 1220 kgs. | 5120 lbs. 2365 kgs. | — | 10.5 lbs./ft. ² 51 kgs./m. ² | 11.2 lbs./h.p. 5.25 kgs./h.p. | 140 m.p.h. 225 km.p.h. | — | 19000 ft. 5800 m. |
| POTEZ | 28 G.R. | 500 h.p. Farman | Biplane | 53' 2" 16.2 m. | 36' 1" 11 m. | 13' 5" 4.1 m. | 678 ft. ² 63 m. ² | 4280 lbs. 1900 kgs. | 11000 lbs. 4770 kgs. | — | 16.2 lbs./ft. ² 75 kgs./m. ² | 21 lbs./h.p. 9.3 kgs./h.p. | 130 m.p.h. 210 km.p.h. (with $\frac{1}{2}$ load) | — | 17000 ft. 5200 m. (with $\frac{1}{2}$ load) |
| SCHRECK F.B.A. | 21 H.M.T.6 | 450 h.p. Lorraine Dietrich | Biplane Amphibian Flying Boat | 15.4 m. | 10.56 m. | 4.2 m. | 53.5 m. ² | — | 2840 kgs. | — | 53 kgs./m. ² | 6.3 kgs./h.p. | 190 km.p.h. | 3000 m. in 30' 0" | 4400 m. |
| S.E.C.M. | 120 B.N.3 | 650 h.p. Farman | Night Bomber Biplane | 21.5 m. | 13.63 m. | 4.9 m. | 95 m. ² | 2110 kgs. | 3960 kgs. | — | — | — | 220 km.p.h. | 4000 m. in 28' 30" | 5500 m. |
| S.I.M.B. BERNARD-FERBOIS | 15 C.1 | 500 h.p. Hispano Suiza | 1 Seat Fighter Sesquiplan | 38' 0" 12 m. | — | — | 24 m. ² | — | 1790 kgs. | — | — | — | 270 km.p.h. | 5000 m. in 12' 30" | 7500 m. |
| S.R.A.P. (BECHEREAU) | C.2 | 500 h.p. Salmson | 2 Seat Fighter Monoplane | 14.6 m. | 10 m. | 3 m. | 35 m. ² | 1558 kgs. | 2360 kgs. | 510 kgs. | 67.42 kgs./m. ² | 4.72 kgs./h.p. | 220 km.p.h. @ 3000 m. | 6000 m. in 31' 40" | 7150 m. |
| VILLIERS, FRANCOIS | V | 450 h.p. Lorraine Dietrich | 2 Seat Night Fighter | 39' 3" 12.0 m. | 8.75 m. | 10' 10" 3.3 m. | 430 ft. ² 40 m. ² | 2810 lbs. 1274 kgs. | 4630 lbs. 2105 kgs. | 1023 lbs. 465 kgs. | 10.8 lbs./ft. ² 52.5 kgs./m. ² | 10.3 lbs./h.p. 4.7 kgs./h.p. | 139 m.p.h. 224 km.p.h. | 6500 m. in 43' 0" | 23000 ft. 7000 m. |
| VILLIERS, FRANCOIS | C.II bis | 450 h.p. Lorraine Dietrich | Fleet Reconnaissance | 42' 7" 13.0 m. | 9.5 m. | 13' 0" 3.95 m. | 430 ft. ² 40 m. ² | — | 4180 lbs. 1900 kgs. | 780 lbs. 350 kgs. | 9.9 lbs./ft. ² 47.5 kgs./m. ² | 9.5 lbs./h.p. 4.2 kgs./h.p. | 134 m.p.h. 217 km.p.h. | 6000 m. in 27.5 m. | 26200 ft. 8000 m. |
| WIBAUT | 7 C.1 | 420 h.p. Jupiter | 1 Seat Fighter Monoplane | 36' 1" 11.0 m. | 24' 7" 7.5 m. | 9' 6" 2.9 m. | 237 ft. ² 22 m. ² | 1825 lbs. 827 kgs. | 3130 lbs. 1444 kgs. | 782 lbs. 352 kgs. | 13.8 lbs./ft. ² 65.6 kgs./m. ² | 7.5 lbs./h.p. 3.44 kgs./h.p. | 137 m.p.h. 222 km.p.h. | 6000 m. in 21' 14" | 28000 ft. 8500 m. |

NOTE:—Useful load does not include fuel but usually includes Crew.

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THE ROYAL AIR FORCE.

The London Gazette.

Nov. 30.

GENERAL DUTIES BRANCH.—Flg. Off. R. S. Blucke is granted a perm. comm. in the rank stated (Nov. 1).

The following Plt. Offs. are promoted to the rank of Flg. Off.:—P. V. Williams, L. T. Pankhurst (Oct. 14); L. A. Walsh (Oct. 17); T. H. Perry-Keene, H. R. Bardon, I. G. E. Dale (Oct. 31). Plt. Off. on probation M. A. Smyth is confirmed in rank (Oct. 20).

Flt. Lt. R. Pyne, D.F.C., is seconded for service as Aide-de-Camp to the Governor of the United Provinces (Nov. 1).

Flt. Lt. E. W. Simpson is granted permission to retain the rank of Sq. Ldr. on transfer to the Reserve (Oct. 24); Flg. Off. G. J. Stroud, M.B.E., is placed on the retired list at his own request and is granted permission to retain the rank of Flt. Lt. (Dec. 1).

The following are transferred to the Reserve:—CLASS A: FLG. OFFS.—F. S. Henderson, G. Terrell (Nov. 27); C. A. Goatcher (Nov. 28). CLASS C: FLT. LTS.—H. L. Nunn, D.S.C., D.F.C., A. J. Nightingale (Nov. 28). Flg. Off. A. R. Braybrooke (Lt., K. Shrops. L.I.) relinquishes his temp. comm. on resigning his comm. in the Army (Nov. 27).

STORES BRANCH.—Flg. Off. R. A. Dolton resigns his S.S. comm. (Dec. 1).

MEDICAL BRANCH.—Flt. Lt. G. R. Hall, M.D., relinquishes his temp. comm. on ceasing to be employed (Oct. 8).

RESERVE OF AIR FORCE OFFICERS.—L. S. Ash is granted a comm. in Class A, General Duties Branch, as a Plt. Off. on probation (Nov. 30); Plt. Off. on probation A. F. Waghorn is confirmed in rank (Nov. 30).

The following relinquish their comms. on completion of service:—Flt. Lt. A. Roberts (Oct. 24); Flg. Off. C. St. C. Parsons (Nov. 20).

MEDICAL BRANCH.—W. G. Weston, M.B., is granted an hon. comm. as a Flt. Lt. (Nov. 30).

Appointments.

Week ending Dec. 6.

GENERAL DUTIES BRANCH.—Wing Commander W. C. Hicks, A.F.C., to R.A.F. Depot, Uxbridge, Supernumerary, pending posting on transfer to Home Estab., 25/10.

Squadron Leaders B. F. Moore, to No. 5 F.T.S., Sealand, 7/12. E. B. Beauman, to R.A.F. Base, Malta, 23/11. C. N. Lowe, M.C., D.F.C., to No. 6 Arm. Car Coy., Iraq, 1/11.

Flight Lieutenants C. J. S. Dearlove, to No. 30 Sqdn., Iraq, 1/11. T. S. Horry, D.F.C., to No. 70 Sqdn., Iraq, 22/10. M. M. Freehill, D.F.C., to No. 55 Sqdn., Iraq, 1/11. G. Archer, to No. 503 Sqdn., Waddington, 23/11. T. Henderson, M.C., A.F.C., to No. 6 Arm. Car Coy., Iraq, 28/10. R. E. G. Fulljames, M.C., and J. A. G. Haslam, M.C., D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10. A. F. James, to No. 5 F.T.S., Sealand, 4/12.

Flying Officers A. E. Røgenhagen, to No. 56 Sqdn., Biggin Hill, 7/12. F. E. R. Dixon, M.C., to No. 3 Stores Depot, Milton, 3/12. S. F. Coleman, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10. C. J. A. Delany, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10. C. H. A. Farnan, to C.F.S., Wittering, 15/12. E. R. C. Hobson, D.F.C., to No. 216 Sqdn., Egypt, 4/11. J. R. Brown, D.F.C., to No. 6 Sqdn., Iraq, 17/9. D. A. Boyle, to No. 6 Sqdn., Iraq, 1/11. L. S. Birt, to No. 84 Sqdn., Iraq, 1/11. A. T. S. Studdert, to No. 30 Sqdn., Iraq, 1/11.

Pilot Officer P. V. Williams, to No. 503 Sqdn., Waddington, 23/11. MEDICAL BRANCH.—Squadron Leader R. W. Ryan, M.B., to H.Q., Egypt, 15/11.

Flight Lieutenants A. E. Jenkins, to Station H.Q., Bircham Newton, 29/11. E. C. K. H. Foreman, to R.A.F. Station, Tangmere, 3/12. T. Sheehan, to R.A.F. Training Base, Leuchars, 29/11.

Flying Officers G. S. Strachan, M.B., to R.A.F. Station, Duxford, 1/12. R. A. W. Kerr, M.B., and E. Thompson, to Research Laboratory and M.O.S. of I, for short course, on appointment to S.S. Comm., 22/11.

STORES BRANCH.—Squadron Leaders F. Grave, M.B.E., to H.Q., Cranwell, 7/12. J. S. Goggin, to H.Q., I.A., Stanmore, on transfer to Home Estab., 6/12.

Flight Lieutenants C. M. Bevan, to H.Q., India, 6/11. C. H. Pownall, to Aircraft Depot, India, 6/11. A. G. Knight, M.B.E., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10. T. S. James, to H.Q., Cranwell, 27/11.

Flying Officers E. A. Burridge, to School of Balloon Training, Larkhill, 23/11. F. W. Todd and C. W. Rugg, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10.

ACCOUNTANT BRANCH.—Flying Officer F. Rigby, to No. 99 Sqdn., Bircham Newton, 9/12.

A Fatal Accident.

The Air Ministry regrets to announce that as the result of an accident at Easton, near Wittering, to an Avro of the Central Flying School, Wittering, on Nov. 30, Fl. Off. Clarence Graham Crowden was killed and Plt. Off. Edward Blakeway Steedman, the pilot of the aircraft, was injured.

A statement by Mr. Steedman was read at the inquest of Mr. Crowden at Wittering on Dec. 1. The statement described how they had made two practice forced landings, and after climbing 200 ft. Mr. Crowden took control. At about 1,000 ft. he put the machine into a spin. Mr. Steedman shouted to warn the pilot that they were too near the ground, but although Mr. Crowden tried to straighten out it was too late.

A verdict of accidental death was returned.

The India G.S. Medal.

The following communiqué has been issued by the Air Ministry:—

The India General Service Medal, 1908, in silver, with Clasp, "Waziristan 1925," will, provided that the claims are approved by the Air Council, and subject to paragraphs 2 and 3 below, be granted to personnel of the R.A.F. who took part in the operations in Waziristan between Mar. 9 and May 1, 1925 (both dates inclusive), under the command of Wing Cdr. (now Group Capt.) R. C. M. Pink,

C.B.E., R.A.F., and who were located at Tank, Miramshah, Sorarogha and Khirgi.

Individuals already entitled to, or in possession of, the medal will receive in addition the clasp only.

Individuals who previously qualified for the India General Service Medal with Clasp, "Waziristan 1921-24" (or for the Clasp, "Waziristan 1921-24" only), and who also took part in the operations referred to in paragraph 1 above, will be given the option of receiving the Clasp "Waziristan 1921-24" or the Clasp "Waziristan 1925," but will not be entitled to receive both clasps to the medal.

Officers no longer serving may obtain copies of the forms of application from the Secretary, Air Ministry, Adastral House, Kingsway, London, W.C.2, and airmen no longer serving from the Officer in Charge Records, Royal Air Force, Ruislip, Uxbridge, Middlesex. The forms, when completed, should be forwarded to the Secretary, Air Ministry.

Accountant Officers.

The Air Ministry announces that the following candidates for permanent commissions in the Accountant Branch of the R.A.F. have been declared successful as a result of a competition held by the Civil Service Commissioners in September, 1926:—

Calder, W. S. (Kirkintilloch), Fuller, F. E. (Worthing), Sweet, R. S. (Hanwell), Connor, H. D. (Ilford), Bakes, H. C. (Bradford), Gregson, J. E. (New Malden), Chadwell, B. (Blackburn), Yiend, D. A. K. (Forest Gate), Glenn, J. H. (Manchester), Johnson, C. M. (Winchester).

R.A.F. SPORTS

Boxing at Henlow.

A Boxing Tournament between Kenley, the winners of the Junior Trophy, and Henlow, the winners of the Open Trophy, of the Wakefield Novices' Competition, was held at Henlow on Dec. 2.

Henlow won five of the seven fights in the team events. In addition to these matches two six-round contests, in which three inter-Services Champions were engaged, were included in the programme.

Group Capt. A. G. Board, C.M.G., D.S.O., acted as Referee and the tournament was organised by Sq. Ldr. A. E. Pettingell.

Special 6-round contest at Bantam-weight.—Sgt. Haslam (Loyal Regt.), Inter-Services Champion and Army Champion since 1924, v. L.A.C. Williamson (Henlow), Inter-Services Fly-weight Champion, 1925, and R.A.F. Champion, 1924-5. Probably the best fight ever seen at Henlow in which both men served up clean and clever boxing. Williamson was more effective at close quarters and built up a small margin of points to get the verdict.

Special 6-round contest at Middle-weight.—Sgt. Higgins (R.A.F.), Inter-Services Champion, 1922 and 1924, v. Guardsman Steele (Household Brigade Middle-weight Champion). Steele was quickly aggressive, but Higgins defended cleverly, and although slower than a year or two ago landed good blows with both hands and was always a little ahead on points.

Fly-weight.—AC. Winslade (Henlow) beat L.A.C. Morley (Kenley) on points. Although much the smaller man, Winslade was always aggressive and made good use of a right hook, while showing good defence against his opponent's counter attacks.

Bantam-weight.—AC. Maher (Henlow) beat AC. Love (Kenley) on points, in one of the best fights of the evening. Love fought back strongly against a clever and stylish boxer, but could not keep pace with his opponent, who followed a lightning left with a punishing right. Maher continues to improve and must be regarded as a serious candidate for Service honours in the near future.

Feather-weight.—AC. Peters (Kenley) was beaten on points by AC. Few (Henlow). Peters had the advantage in reach and height, while his unorthodox style of leading with the right makes him an awkward customer to deal with, but Few attacked continuously and always scored quickly at close quarters.

Light-weight.—L.A.C. Bailey (Kenley) beat AC. Knight (Henlow) on points. Bailey used a straight left to advantage in winning the first fight for Kenley. Knight put up a game show, and should improve with experience.

Welter-weight.—AC. McGinn (Henlow) beat AC. Moss (Kenley) on points. This was a hammer and tongs bout, in which both men mixed it freely, but McGinn was the more versatile and good generalship won the day.

Middle-weight.—L.A.C. Robinson (Henlow) received a points' decision over AC. Sully (Kenley) after a very close bout. Robinson slipped in the first round and appeared to shake himself rather badly, and although always a little ahead he failed to reproduce the form which won him the Wakefield title and Henlow the trophy.

Light-heavy-weight.—AC. Coote (Kenley) boxed strongly against L.A.C. Holman (Henlow) and after putting his man down in the first minute won when a left to the point put his man out for the count.

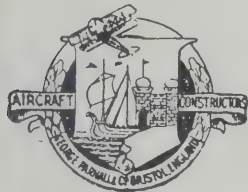
Special eliminating bout of 3 rounds.—AC. Welch and AC. Williams, both of Henlow, had a ding-dong battle with plenty of toe-to-toe punching, the former receiving the verdict by a narrow margin.

Team Boxing Championships.

The R.A.F. Team Boxing Championships.—In the semi-finals of the Open Division, Netheravon is drawn against Manston and the Home Aircraft Depot against Halton. The first named are home teams. The semi-finals are to be concluded by Jan. 31.

In the first round of the Junior Division, Kenley beat the Armament and Gunnery School, 11-9, Duxford beat Northolt, 12-5, Old Sarum beat Andover, 16-8, No. 2 F.T.S. beat the M.T. Repair Depot, 10-9, and the School of Balloon Training beat Upavon, 11-10.

In the second round, No. 2 F.T.S. meets No. 5 F.T.S., the School of Balloon Training meets the R.A.F. Base, Gosport, Kenley meets Old Sarum, and Martlesham meets Duxford. The second round is to be concluded by Dec. 22.



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THE IMPERIAL CONFERENCE.

The official summary of the proceedings of the Imperial Conference, 1926, includes the following Resolutions on Air Defence and Imperial Air Communications:—

AIR DEFENCE.

(a.) The Conference takes note with satisfaction of the substantial progress that has been made since 1923 in building up the Air Forces and resources of the several parts of the Empire.

(b.) Recognising that the fullest mobility is essential to the effective and economical employment of air power, the Conference recommends, for the consideration of the several Governments, the adoption of the following principle:—

The necessity for creating and maintaining an adequate chain of air bases and refuelling stations.

(c.) Impressed with the desirability of still closer co-ordination in this as in all other spheres of common interest, and in particular with the advantages which should follow from a more general dissemination of the experience acquired in the use of this new arm under the widely varying conditions which obtain in different parts of the Empire, the Conference recommends for consideration by the Governments interested the adoption in principle of a system of mutual interchange of individual Officers for liaison and other duties, and of complete air units, so far as local requirements and resources permit.

The Conference notes with satisfaction that considerable progress in the direction of closer co-operation in defence matters has been effected by the reciprocal attachment of naval, military and air officers to the Staff Colleges and other technical establishments maintained in various parts of the Empire, and invites the attention of the Governments represented to the facilities afforded by the new Imperial Defence College in London for the education of officers in the broadest aspects of strategy.

IMPERIAL AIR COMMUNICATIONS.

An interesting discussion on Imperial Air Communications took place at the Tenth Meeting of the Conference on Oct. 28, when statements were made regarding the progress achieved in civil aviation in the various parts of the British Empire. The Conference was deeply impressed with the great possibilities offered by the development of Imperial air communications and their importance from the political as well as the economic point of view.

The Secretary of State for Air in an opening statement outlined the policy which was being pursued by His Majesty's Government in Great Britain for the development of civil aviation. The ultimate objective of this policy was to bring the most distant parts of the Empire within a fortnight's journey of London, and in the first instance he suggested that it would be advisable to concentrate on two main routes, namely, from England to Australia and South Africa respectively. The first links in these routes were being forged by the Cairo-Karachi and Khartum-Kisumu services which were to come into operation in 1927. Sir Samuel Hoare suggested that these links might be extended by service flights to be undertaken by the Royal Air Force and the Australian and South African Air Forces in co-operation, whilst generally, having regard to financial limitations, the best prospect of progress appeared to lie in each of the countries of the Empire undertaking responsibility for developing the sections lying within its own territory, and so gradually building up (on what might be called a mosaic plan) a complete system of Imperial air routes. He also drew attention to the great potentialities of the airship as providing a safe, comfortable, and rapid means of non-stop transport over long distances, aeroplanes being ultimately more suitable for comparatively short-distance flights. Sir Samuel Hoare stated that His Majesty's Government in Great Britain would probably be ready to undertake airship demonstration flights to the Dominions and India in about two years' time, and inquired whether the latter would be prepared to co-operate by providing mooring masts and the organisation for procuring the essential meteorological information.

The representatives of the overseas parts of the Empire expressed their readiness to give immediate and sympathetic consideration to these suggestions; and the matter was referred to a Special Sub-Committee under the Chairmanship of Sir Samuel Hoare for examination in detail.

This Sub-Committee, after reviewing the present state of air communications in the various parts of the Empire and considering what concrete steps can be taken to further the development of Imperial air services in the immediate future, reported their conviction that the development of Imperial air communications, both by airship and by aeroplane, is of sufficient importance to merit the early and continuous attention of the Governments of the several parts of the Empire, and accordingly recommended that the Imperial Conference should place on record the following Resolutions:—

"The Imperial Conference, being impressed with the great benefits, both political and commercial, to be derived from the speeding up of Imperial communications by air—(1.) Takes note with satisfaction—

(a.) Of the prospective opening of a regular air service between Cairo and Karachi and an experimental service between Khartum and Kisumu;

(b.) Of the decisions of His Majesty's Governments in Great Britain and in the Union of South Africa to carry out a series of experimental flights to connect so far as possible with this latter service; and

(c.) Of the decision of His Majesty's Government in the Commonwealth of Australia to arrange for flights by the Royal Australian Air Force from Australia towards Singapore to link up with similar flights of the Royal Air Force from Singapore towards Australia.

(2.) Recommends that the development of other air services should receive the early consideration of the Governments concerned; and that in this connection particular attention should be paid to the maintenance of existing and the construction of new aerodromes so far as local resources permit with a view to the ultimate creation of a complete system of Empire air routes.

(3.) In view of—

(a.) The great potentialities of the airship; and

(b.) The present lack of constructional and other facilities which must prove a serious obstacle to the early development of regular airship services—recommends that the Governments of the Dominions concerned and of India should examine the possibility of erecting nucleus mooring mast bases to be available for demonstration flights in 1928/29 by the two airships now under construction, and of instituting such preliminary meteorological investigations as may be necessary to facilitate these demonstration flights; and that His Majesty's Government in Great Britain should consider the erection of a second shed at the Royal Airship Works at Cardington.

(4.) Recommends that an Imperial Air Conference should be held in 1928 or 1929, the precise date to be determined later, at some suitable Imperial centre, to report progress and to consider what further action can be taken for the development of Imperial air communications; and takes note with appreciation of the invitation of the Dominion of Canada that this Conference should take place in Canada.

These Resolutions were unanimously adopted by the Imperial Conference at its Fifteenth Meeting on Nov. 19.

THE R.A.F. IN PARLIAMENT.

R.A.F. ACCIDENTS.

In the House of Commons on Nov. 29, in reply to a question by CAPT. W. BENN, the SECRETARY OF STATE FOR AIR said that he appreciated most fully the grave undesirability of the publication of reports of flying accidents before the names could be stated. There were two obligations of humanity in this matter. One was to avoid the painful anxiety which might be caused to a wide circle of relatives of many officers and men. But there was also that of sparing the feelings of the bereaved family.

It was with the latter obligation in view that the Air Ministry had arranged not to issue a communiqué for 24 hours in order to render it reasonably certain that the relatives would have received the telegram notifying the casualty even if they were away from home at the time. There was obviously a certain conflict between the claims of humanity and of journalistic enterprise.

The object of his Department could only be fully achieved by the newspapers withholding publication until they had received the official communiqué. He did not know whether, in this quite limited sphere, the Press could agree to a self-denying ordinance. If it were possible the officers and men of the Air Force and their relatives would, he was sure, be very grateful and the general public would, he thought, be content to wait a few hours for the news.

[All the relatives of the officers and men of the R.A.F. will appreciate Sir Samuel Hoare's efforts to prevent the daily Press from making copy out of service casualties. But they will also realise that he might just as well try and appeal to the better nature of a bo-constrictor.]

INDIANS IN THE R.A.F.

In the House of Commons on Nov. 29, in reply to a question by MR. KELLY, the UNDER-SECRETARY OF STATE FOR INDIA said that R.A.F. Units in India were in the same position as units in the British Army in that country, i.e., they were units of the Imperial Forces and not part of the Indian Army. These units did not comprise enlisted Indian personnel, but Indians engaged as civilians for various duties. The number of Indians at present so employed was about 1,000.

RECRUITING IN THE R.A.F.

In the House of Commons on Dec. 1, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that the number of recruits in the R.A.F. for the year ending October, 1926, was 438 and the number of Apprentices enrolled for the same period was 1,009.

WAR-TIME MACHINES IN THE R.A.F.

In the House of Commons on Dec. 1, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that during the 12 months ending Nov. 22, 1926, there had been 54 fatal accidents in the R.A.F.

Of these, 36 occurred on aircraft of types in service before the end of the War and 18 on types brought into service after the War.

The number of hours flown on machines of "War-time" design was very much greater than that flown on machines of "post-War" design, and there was no ground for believing that the older types of machine still in use were more liable to accident than those of more modern design.

AIR WARFARE.

A lecture on Air Warfare will be delivered in the Chemical Lecture Theatre at the Imperial College of Science and Technology, Imperial Institute Road, South Kensington, on Dec. 9, at 17.30 hours, by Air Vice-Marshal H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., Air Officer Commanding, Fighting Area (R.A.F.), Uxbridge.

Admission to the lecture is free and no tickets are required.

THE MANCHESTER ASSOCIATION OF ENGINEERS.

In his inaugural address on Oct. 22, the President of the Manchester Association of Engineers, devoted a certain amount of time to Aviation.

He referred to the Sir Charles Wakefield Flight to Australia and back and discussed the historical events which have led up to the development of the modern aeroplane. He concluded his address with a brief description of the civil aviation activities of the past few months.

A notable omission from the presidential address, at any rate from the copy of it which was sent to this office, was any mention of the famous pioneers of aircraft construction, A. V. Roe and Co. Ltd. of Newton Heath, Manchester.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE SCHNEIDER TROPHY CONTEST.

Detailed news of how Italy regained the Schneider Trophy for Europe is now to hand. It appears that America lost the Trophy through underrating her rivals and from not taking sufficient care to train her pilots or to test the machines. In fact she lost the Trophy to Italy from very much the same causes as we lost it to America in 1923. Commenting on the Italian win *Aviation* (New York) says:—

Italy won because her planes were aerodynamically faster than were ours; her engines were more powerful; and her pilots, among the finest in her country, and her mechanics, together worked in unison as one body. Her team work was remarkable and had become a most noticeable feature to everyone who went to Norfolk for the race. These accumulated factors all worked together to spell success to her team and the Italians now prepare to carry back to Italy a trophy which they came over to win and which they will now undoubtedly guard with justifiable pride.

This country had held the World seaplane speed honours ever since Lieut. Rittenhouse first captured the Schneider Cup from the British at Cowes, in 1923. Her challengers for these honours have not until now met with much success. Possibly we have been led to sink into the misconception that we needed no special effort on our own part in order to hold this trophy and that the development of our new engines this year would be sufficient to defeat successfully all challengers. But there is more to it than this. One branch of our air services obviously cannot be entrusted with the defence of our laurels in the air. Last year the Navy's activities in the Schneider Cup Contest, quite apart from the fact that she did not win, were a failure. This year conditions were even worse. The Navy looks upon the Schneider Cup contest as a means of training her personnel, as was characterised by the fact that two of our best racing pilots, Navy men, stood by, while a pilot of unquestioned ability but with little or no racing experience was permitted to wreck one of our best planes and narrowly escape with his own life. To win in the future the personnel of both Army and Navy must be made available.

All this points strongly to the fact that it is in private enterprise that we must expect the greatest success. The Italian Air Department, under the direction of Premier Mussolini, ordered the three Macchi racers but left the development of the planes and the management and organisation of their national effort in the hands of private enterprise. The race organisation was entirely in the hands of the Macchi and Fiat concerns whose products were at stake. Their crews worked in unison. As already mentioned, their co-operation was remarked on by everyone. Italy won the Schneider Cup because of the keen determination of private enterprise. The Italian Government has bought with its money the international prestige in the air which it gained on Saturday when its subjects put up so remarkable a performance.

Here is a lesson for us in Great Britain to learn. "We must let our best pilots fly our machines in 1928 (if they should be finished by then), irrespective of whether they be civilians or of the special "High Speed Flight" at Felixstowe.

Under perfect weather conditions and assisted by a crowd estimated at 30,000 people the contest took place on Nov. 13. The race itself was without untoward incident except for the fact that one American machine and one Italian retired from the race. Captain Arturo Ferrarin, flying No. 5, was forced to alight owing to a breakage in an oil pipe. Until then he

had made an average speed of 238.358 m.p.h. over the hundred kilometres which he had completed. This would probably have given him second place had he continued.

Lieut. George Cuddihy, flying R3C-4 Curtiss with a Curtiss V-1550 engine was also forced to retire from the race when he was about to finish the last leg of the seventh and last lap owing to his petrol supply failing through the pump which brought petrol up from the tank in the floats failing to work. Apart from this his engine ran perfectly throughout the entire 300 kilometres. It was on this machine that America had centred her hopes of retaining the Trophy.

Shortly before 2.30 p.m., the official start of the race, a naval H.S.2-L. Service flying-boat set out to patrol the middle of the course so as to be able to give help where necessary. The machine was fully equipped with fire-fighting apparatus and had already demonstrated its use earlier in the week when Captain Ferrarin's engine caught fire during a test flight and the boat dashed to his assistance with a fire extinguisher.

Lieut. Bacula was the first off and was let down the slipway at 2.35 p.m. He taxied rapidly across the starting line which according to the rules must be passed on the water. His actual take-off lasted about 20 to 30 seconds which was about the time taken by all the three Italian machines. The Americans took slightly longer. It was also noticeable that the Italian machines raised very much less spray than did the American. It is of further interest to note that the floats of the Italian machines were almost identical with floats designed by Short Brothers for the Gloster last year and in fact one believes that they were actually copied from them.

The second machine off was the Curtiss Hawk, which Lieut. Tomlinson flew in place of the R3C-3 which he had wrecked before the race through misjudging his height when alighting. This machine was entered in case all the three Italian and the other two American machines were forced to alight.

The next plane to leave, under the schedule of one machine starting every five minutes, was No. 3 piloted by Captain Ferrarin, who appeared to be having trouble in warming up his engine. There was some delay in getting him off and so Lieut. Cuddihy in No. 4, the Curtiss R3C-4, started off, and one minute after him Ferrarin left.

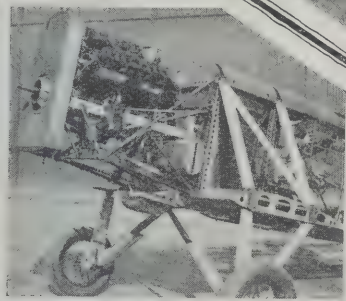
By this time Lieut. Bacula had finished his first lap at an average speed of 209.584 m.p.h. This caused some surprise, but it was afterwards ascertained that Lieut. Bacula had been told to fly with his engine throttled down in case the other two Macchis were forced out of the race. This is the good old Italian car-racing tactic. One driver drives for reliability, one for the fastest lap, and one for highest possible full-distance speed.

Major de Bernardi, Captain of the Italian team, took off at about 3 p.m., and was followed a minute later by Lieut. Schilt of the U.S. Marine Corps, flying last year's winner, the R3C-2. Almost at the same time Captain Ferrarin re-

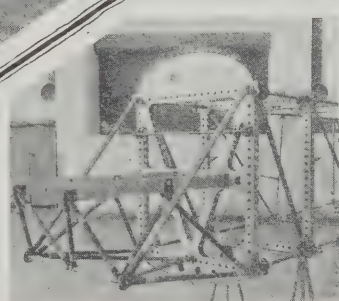


THE VICTOR.—Major de Bernardi on his Macchi, coming ashore after winning the Schneider Trophy.

^v
The S.16 (450 h.p. Lorraine Dietrich engine).



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turned from his second lap and it was seen that his speed was 238.748 miles an hour, which was the first indication to the Americans that they were likely to lose the Trophy, for Lieut. Cuddihy's machine over its second lap was shown to be doing only 236.180 m.p.h.

The first real intimation, however, that the Trophy would leave America was given when Major de Bernardi completed his first lap at a speed of 239.443 m.p.h. In the meantime Lieut. Cuddihy was increasing his speed average by about one mile per hour on each lap and Lieut. Schilt was doing 230 m.p.h. When Captain Ferrarin had completed the third lap and had done 238.358 m.p.h. over three laps (he had covered the second lap at 243.012 m.p.h.) it was seen that he was having trouble with his engine and consequently he alighted, his trouble being a broken oil pipe.

Meanwhile Major de Bernardi had completed his third lap which averaged 244.946 m.p.h., and the retirement of Capt. Ferrarin left Lieut. Cuddihy flying second, and the American supporters presumably were wishing that the Italian leader's engine would stop.

It was noticeable that the Italians were taking the pylons wide, in some cases flying 200 yards or so away from the turning point. It may be that they gained by this because a lot is lost in acceleration and deceleration. One remembers that in 1923 at Cowes the Americans turned their corners very wide though last year Lieut. Doolittle took his corners very close indeed.

Lieut. Bacula was the first to finish, his average being 218.006 m.p.h. Lieut. Schilt was coming round regularly bringing his average up to 231.173. Lieut. Cuddihy failed to return at the end of his seventh lap and search parties went out and found him floating about with a dead engine. On Major de Bernardi's sixth lap it was noticed that he was flying considerably higher than he had done previously. It was afterwards found that his oil had overheated and he rose to about 600 feet to try to lower the oil temperature. He came down low again on his last lap and shot across the finishing line at 247.207 m.p.h.

Lieut. Schilt came in third to the finish and a whole lap behind came Lieut. Tomlinson on the Hawk.

According to *Aviation*, the Italians won as the result of superiority in design over the American machines and excellent team work.

The postponement of the race was due to the decision of the Contest Committee after a joint meeting on Nov. 10 with the pilots of both teams, who agreed that the weather conditions were such as to entail serious risk to the pilots during the manoeuvrability test. The general consensus of opinion was that it was better to have the race on Saturday, which was a half-holiday, and also have all the six machines entered, than to hurry it off on Friday with Italy and America only partially represented. This seems to have been an eminently sensible decision, though some F.A.I. people hold that competitors must not monkey with dates.

The only incidents in the elimination trials were the fact that the motor launch which took Major de Bernardi in tow after he had completed his navigability tests bumped a float and damaged it. In view of the fact that the accident was due to carelessness of a party outside the race the Contest Committee declared that the float could be repaired, and the seaworthiness tests be completed on the following morning.

The only dissatisfaction seemed to exist in the American camp where no final decision had been reached the night before the contest as to who was to fly the star R3C-4. Which after all is very much like the way we do things in England.

Taking it by and large the conduct and operation of the contest seems to have been highly successful and four finishers must be a record for the event. The Italian Macchis certainly seem to be what the Fokker Bulletin calls "magic comets."

ITALY'S VICTORY.

The following exchange of telegrams is interesting:—
To H.E. Mussolini, Rome:—"Your orders to win at all cost have been obeyed. We have won at a speed never before attained.—MAJOR DE BERNARDI."

To Major De Bernardi, Rome:—"To you, to your fellow aviators, to all the personnel who have collaborated on the conquest of the dearly sought prize, Italy sends her greatest applause for the superb victory. This Italy, who has followed you and guided you in this perilous and difficult test, is to-day proud of the men who by their genius have created such powerful machines, and is enthusiastic of you, magnificent pilots, who have brought them to triumph.—MUSSOLINI."

[Which again shows the difference between a Mussolini and an Air Ministry.—ED.]

SCHNEIDER TROPHY HOPES.

At least Great Britain can claim some small share in the Italian win in the Schneider Trophy contest. The crankshaft of the Fiat engine was built by Vickers Ltd. in England. It is a great tribute to British workmanship that the Italians, who are such splendid engineers, should have been obliged to come to England for this important part.

One gathers that there is already considerable activity in the Air Ministry about the 1928 contest. Those in authority are said to consider the contest to be quite important, and the fact that the Italians were able to achieve their success in seven months has been noted—and filed for reference.

It is alleged that the Air Ministry has issued an ultimatum to the constructors to have the three racing machines ready for flying by Dec. 31, and as a result night shifts are working in some cases on the racers.

One would suggest that the Air Ministry should promise any firm which builds a racer good enough to compete in the Schneider Trophy Contest, that they shall have a substantial order for R.A.F. machines based on the racer. Such a firm might be promised an order for a number of machines yearly for five years providing that during that time the racer was still developed.

This might induce those firms to compete who say that they prefer to go on building standard machines for the Air Force. It would certainly improve the breed.

Meanwhile what seems to be needed is a 12-cylinder inverted V air-cooled engine. If we had that we might be able to build a still quicker racer. The Americans and the Italians are already well away on that line of development.

SCHNEIDER SECRETS.

Last year it may be remembered that the Air Ministry indulged in an absolute orgy of secrecy about Schneider Trophy machines. It may be recalled that so great was their passion for Schneider secrets that they announced that they would not enter for the event at all this year in case someone got to know about it.

An irresponsible Scotsman, however, tells one that the Air Ministry were wiler and secretar than one supposed. He tells me that we did compete in the Contest after all and what is more we won it, or at any rate Scotland did.

Most people were under the impression that the machines were built by an Italian named Macchi. As a matter of fact one's informant says that they were built by a Scotsman named MacChi. He further tells one that Mr. MacChi is one of the earliest pioneers of aviation. One of his earlier successes is alluded to in a song of 1907 vintage. It ran as follows:—

"All the girls began to cry,
Hie, Hie, Hie, Mr. MacChi,
Take us with you when you fly
Back to the Isle of Skye. Hoch, Aye."

In later editions of the song Mr. MacChi is spelt Mr. Mackie, but it is actually the same man. It is probable that the name was changed out of deference to the wishes of whoever was then running the Secrecy Department.

Mr. MacChi appears again in one of the recent songs of Sir Harry Lauder. It begins thus:—

"When I meet MacChi and MacChi meets me,
I treat MacChi and then MacChi treats me."

All this definitely proves that Scotland still stands where it did—wherever that may be.—G. D.



AT THE POST.—A part of the crowd watching one of the Curtiss machines at the turning point at Norfolk, Virginia. The number of cars seems to indicate a condition of air-mindedness.

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Section of Aerial Photographic Map of London (showing Aldwych and the Strand), which is being undertaken by Aerofilms Ltd., Scale—25 ins. to the mile (1:2500).

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THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Dec. 5.

Total flying time 17 hrs. 5 mins.

The following members were given flying instruction:—H. M. Samuelson, Miss Fletcher, E. J. B. King, H. Spooner, W. L. McCleod, D. P. H. Esler, G. C. Bonner, J. A. Simson, A. J. Richardson, J. J. Hofer, M. P. Susman, Miss O'Brien, Lady Bailey, H. Richardson, E. A. Lingard, R. Malcolm.

The following made solo flights:—O. J. Tapper, C. E. Murrell, G. Terrell, A. R. Ogston, S. O. Bradshaw, W. L. McCleod, N. Jones, D. P. H. Esler, E. S. Brough, N. J. Hulbert, W. Hay, H. Spooner.

The following were given joy-rides:—N. H. M. Watkins, B. Waugh, Mrs. Skinner, Miss Spooner, E. S. Brough, Col. O'Meara, Mrs. O'Meara, S. O. Bradshaw.

The late J. S. M. Michie.—In deference to wishes expressed by a large number of the members, it has been decided to raise a fund to erect a stone over the grave of the late J. S. M. Michie at Kingsbury Church. Members wishing to subscribe are asked to give their donations to Capt. F. G. M. Sparks at Stag Lane Aerodrome, or send them to the Secretary, at 3, Clifford Street, London, W.1. Donations are limited to 10s.

Christmas Holidays.—The Club will be closed down during the Christmas Holidays, from Thursday, Dec. 23, to Thursday, Dec. 30.

The total flying for the month of November was 71 hrs. 45 mins., made up as follows:—"A" Licence Soloists, 52 flights, 20 members, 18 hrs. 15 mins. Dual Instruction, 83 flights, 37 members, 36 hrs. 30 mins. Joy-rides, 24 flights, 22 members, 9 hrs. 25 mins. Practice Soloists, 2 flights, 2 members, 30 mins. Tests, 43 flights, 7 hrs. 5 mins. Total: 71 hrs. 45 mins.

Mr. S. L. F. St. Barbe is continuing to make satisfactory progress. During his absence the De Havilland Aircraft Company Ltd. are kindly allowing their Pilot Instructors, Messrs. A. S. White, C. D. Barnard and R. W. Reeve to help the Club.

The Air Ministry and the Club.—The Inspection of the Club by the Air Ministry Committee under the Chairmanship of Air Vice-Marshal Sir Sefton Branker took place on Wednesday last. The Club was represented by Major R. H. Mayo, Col. The Master of Sempill, Capt. C. B. Wilson, and Wing Cdr. T. O'B. Hubbard, members of the Committee, and Mr. H. F. Perrin, Secretary. A full discussion took place in the morning on the various statistics as to running costs, etc., and in the afternoon the Committee visited Stag Lane Aerodrome.

The Lancashire Aero Club.

Report for week ending Dec. 4.

Total flying time 13 hrs. 50 mins., made up as follows:—

Dual with Messrs. Brown and Scholes:—Messrs. Costa 1 hr. 10 mins., Twemlow 1 hr., Moore 45 mins., Nelson 40 mins., Miss Brown 40 mins., Messrs. Stern and Blagden 35 mins. each, Miss Emery 30 mins., Messrs. Harper and Fray 25 mins. each, Messrs. Dickinson, Newton and Meads 20 mins. each, Dobson 15 mins., Anderson and Fallon 10 mins. each.

Solo:—Messrs. Costa 1 hr. 15 mins., Leeming 25 mins., Lacayo, Michelson, Twemlow, Blagden and Cantrill 20 mins. each.

Joy-rides:—With Mr. Lacayo—Miss Mitchell 25 mins.; with Mr. Leeming—Miss Jones 20 mins.; with Mr. Goodfellow—Mrs. Goodfellow 10 mins., Miss Montgomery 10 mins.

Test flights:—55 mins.

Excellent first solos were made during the week by Messrs. Blagden and Twemlow, while in addition Mr. Costa joined the select ranks of those who aviate on the Renault-Avro.

This correspondent has momentarily run out of printable comments on the weather. He had been relying on our Mr. Brown for a few choice remarks in Spanish, but apparently they don't have this kind of weather in Spain and there are no Spanish expletives to meet it.

A total of 77 hrs. 20 mins.' flying has been wrested out of the November weather and even this modest total has taken a lot of doing.

It will be remembered that two of our members have already pushed off in search of the sun and have reached Malta, where they are at present detained by (we hope) the hospitality of the inhabitants.

Another member, Mr. J^hn F^{shw}*ck L^m*ng, frenzied by our grey skies, is also pushing off in the near future. Having offered a prize to members of the Club for a height contest, he is about to set a good example by seeking out the highest convenient mountain and making a three point landing on top of same. Presumably he hopes to find the summit bathed in sunshine somewhere above the clouds, and we hope he is right.

The Yorkshire Aeroplane Club.

Report for week ending Dec. 3.

Flying only took place on two days, when 2 hrs. 30 mins. was flown in seven flights, made up as follows:—

Solo, 1 hr. 50 mins.; dual, 15 mins.; test, 5 mins.; and a joy-ride of 20 mins. given by Mr. Carter.

Messrs. Lax, Mann and Watson flew solo. Mr. Mann also received 15 mins.' advanced dual.

The official examiner, Mr. Loton, came over from Brough on Sunday in the hope of being able to pass out the members ready to take their "A" Licence, but our hopes were again damped by the dense fog, so the tests had to be postponed.

The Committee is at present considering the purchase of a third machine for the use of solo members. Our choice rests between the Bristol Brownie, Beardmore Wee Bee, Parnall Pixie, or the D.H.53, the Air Ministry having six of the latter type for disposal by auction.

The Club has already been promised £200 towards the purchase of a third machine provided we are able to find the balance. Further contributions from anyone interested in the Club will therefore be most gratefully received by the Secretary.

The Hampshire Aeroplane Club.

Report for week ending Dec. 2.

G-EBOH is still waiting for its new airscrew, but G-EBOI has been putting in good work and in spite of fogs the week's flying time was practically eight hours.

Instruction flying 5 hrs. Solo flying 2 hrs. 45 mins. Passenger flying 15 mins. Total 8 hrs.

The following members had instruction:—Cooper 45 mins., Lieut. Heinemann, R.N., 40 mins., Kerry 35 mins., Dickson 25 mins., Shepherd 25 mins., Southcliffe 25 mins., Moloney 15 mins., Perfect 10 mins., Langley 10 mins., Bound 10 mins., and Keeping 50 mins.

Mr. Keeping was successfully sent off solo and shows promise of becoming as good a pilot as he is a footballer.

The soloists were:—Rumble 37 mins., Fry 35 mins., Simmonds 25 mins., Perfect 18 mins., Lieut. Graham, R.N., 35 mins., Keeping 10 mins., Bowen 5 mins.

On Sunday, Mr. O. E. Simmonds passed the qualifying tests for his "A" Licence.

The Club held its first Annual Dinner at the South Western Hotel, Southampton, on Thursday, Dec. 2. The event was a great success.

Among the large company present were the Mayor and Mayoress (Alderman and Mrs. P. V. Bowyer), Lord Apsley, D.S.O., M.P., Col. E. K. Perkins, C.B.E., M.P., and Mrs. Perkins, Mr. O. E. Simmonds, M.A. (Chairman of the Club), Mr. R. V. Perfect (Hon. Secretary), Mr. A. V. Roe, O.B.E., the Rev. E. Bruce Cornford, M.A., the Sheriff of Southampton (Councillor Mrs. Foster Welch), the Deputy Mayor (Councillor J. E. Silverman and Mrs. Silverman, Mr. R. J. Parrott, Sq. Cdr. J. Bird, O.B.E., R.N., Capt. F. J. Bailey, Col. Crichton, Capt. Wilson, Capt. G. I. Thomson, D.F.C. (chief pilot instructor to the Club, Dr. Butler, Mr. A. N. Clifton, and many others.

The compliments of the Club were conveyed to Alderman P. V. Bowyer on his election to the office of Chief Magistrate by Mr. R. Bishop, who proposed the toast of the Mayor and Corporation. The Mayor, besides being Chief Magistrate, was Admiral of the Port, and it might be conceivable that in the future he might also become Air Marshal.

The Mayor, in reply, said it was the third official function in connection with aviation in some form or other that he had attended since he came into office. He first bade bon voyage to Sir Alan Cobham on his departure to America, and a few days later he had the pleasure of inspecting the Supermarine Aviation Works at Woolston. He would like to call special attention to the wonderful aviation works at Southampton. Over 800 people were employed there building flying-boats, and he believed few people in Southampton knew of the excellent work being produced there. He only wished the shipyards, not only of the country generally, but at Southampton in particular, were as busy as were the Supermarine Works at Woolston.

The Sheriff (Mrs. Foster Welch), who also responded to the toast, said the Corporation were keenly interested in everything in connection with the commerce of the port, and aviation was very largely one of the town's commercial assets. At any rate they hoped it would be, and the wonderful aviation works at Woolston would help in this respect. She hoped that Southampton would be a base of the commercial and passenger air services of the future.

Lord Louis Mountbatten proposed the toast of "Our Guests," but he confessed it was difficult to know who to include. Lord Apsley, he observed lightly, was there under false pretences, as he was a member of the Club, and Air Vice-Marshal Sir Sefton Branker, though a guest, had professed that he would sooner hear himself speak than listen to other people. He considered that the Hampshire Club was of national importance.

Lord Apsley, replying, said it was agreed that everything must be done to encourage aviation in this country. Pilots got all the fun they wanted, but so far as the non-piloting member was concerned, aviation as a sport was not likely to make great strides. It could not be compared with hunting, polo, or even pillow-riding. There was the aspect of usefulness, but this was entirely a question of conveying people rapidly from one place to another. Air taxis, of which there had been services during the war, had, on the whole, been used only by a fairly limited class of people—diplomats, politicians, financiers, run-away couples, criminals, and others. The only people who used them for pleasure were American tourists.

He believed the light aeroplane clubs could do a great deal towards popularising flying for pleasure. At no distant date almost everyone who could afford it would have the light aeroplane with chauffeur pilot. The work of the Hampshire and the other clubs was educational.

Col. E. K. Perkins submitted the toast of "Civil Aviation."

Air Vice-Marshal Sir Sefton Branker, in reply, said he had had the opportunity of inspecting the Hampshire Club, and he congratulated the members most heartily. They formed the youngest of six clubs, and in their period of 114 days' work their progress compared most favourably with anything that anyone else had done in this country. He had recently visited the five other clubs, and he felt that the very small amount of money the Government had put into the business had been extremely well expended. He could almost say it was the cheapest thing the Government had done in aviation since the war, and he was not sure that it was not the biggest.

Proceeding, Sir Sefton said his trouble was future finance. The Treasury were difficult to deal with. They quite realised they would have to contribute their help to the clubs in some way, but he desired to impress upon them the doctrine of self-help. He pointed out that the people of Hampshire should now carry on the honour of the country and see the club through to a certain extent. Government assistance must be confined to the flying operational side.

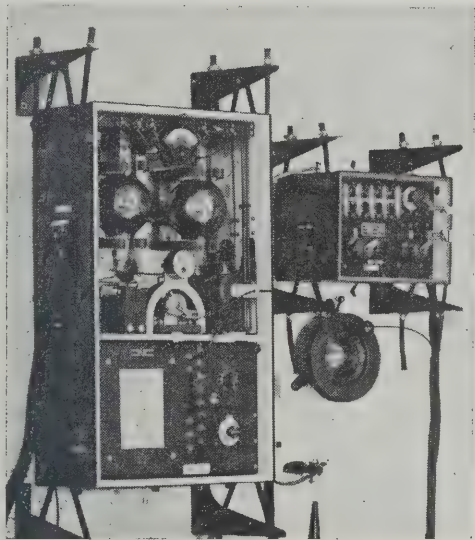
The Government realised flying was expensive, and their policy was to assess the cost of flying to ascertain just how much the young man could afford to pay for it, and to fill the gap between the two. The Secretary of State, the Under-Secretary, and the Chief of the Air Staff were out to help the movement.

The Germans were enterprising people. It might be that the Treaty of Versailles had prevented them spending money on the military side, but in all the big German cities there were aerodromes, not produced by Government subsidy, but by the local municipalities.

The Rev. Bruce Cornford, who proposed the health of "The Club," suggested that his qualification for so doing was that he had been a "sky pilot" longer than anyone in the room!

Mr. Simmonds, in reply, discoursed interestingly on the Club's activities. Its membership, to date was 154, which was almost one-sixth of the total membership of the six subsidised clubs, although it had been in existence only one-third of the time. Since the club

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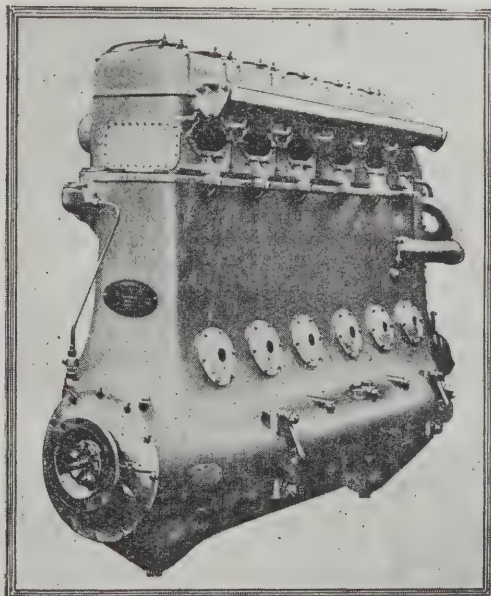
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.48 lbs. per B.H.P. hour.

The Beardmore "Cyclone" Aero Engine marks a distinct forward step in design. The combination of direct drive and low head resistance and slow moving propeller makes for great aerodynamic efficiency.

Simplicity in design ensures low maintenance costs.



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Consumption,**

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Enquiries can be directed for convenience to Aero Engine Dept., William Beardmore & Co., Ltd., 36, Victoria Street, London, S.W.1.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

started flying operations 114 days ago it had put in 210 hours in the air. This comprised 680 flights, many of which included five or six landings, and 120 of these flights were "solos." He thought they should congratulate their inspector on the fact that already seven members of the club were flying "solo," although three months ago they had scarcely had their hands on the "joy-stick." Three of these members went "solo" in only six hours' "dual," which meant that the total cost to themselves of learning to fly was £13 16s. No fewer than 682 members had flown with the instructor as day members.

Sq. Cdr. Bird, proposing the health of "Our President," suggested, in view of the inadequacy of its premises that a fund should be opened to provide for the equipment of the club-house.

In responding, the President offered to open the list with a subscription of £50, and several others present followed his sporting lead with generous offers.

A very enjoyable evening was concluded by a humorous debate which was opened by Mr. A. V. Roe placing before the gathering a motion "That Flying should be abolished." This motion was opposed by Mr. Thomson, representing the Royal Aero Club, and a lively debate ensued, which produced some delightful speeches.

Air Vice-Marshal Sir Sefton Brancker was all in favour of abolishing aviation of the Service type, but considered that Civil Aviation had its commendable points; as he said, it does provide a few people with a living wage!!!

Flg. Off. Clarkson made a telling reply to Sir Sefton's speech, and proceeded to explain why "an F/O's lot is not an 'appy one." He considered it a bit hard therefore that we should complain that night-bombing squadrons keep us awake at night: we should think of the poor pilots who have to get into a nasty cold aeroplane and take it up at nine or ten o'clock pip emma, just when they would otherwise be in bed. [Do pilots go to bed at 21.00 or 22.00 hrs.?—Ed.]

Mrs. Elliott Lynn was entirely in agreement with Mr. Roe. She pointed out that flying is such a delightful sport that it grows on one, and after all, too much pleasure is bad for us.

Many other arguments for and against flying were submitted and to prevent trouble Mr. A. V. Roe decided to withdraw his motion.

Towards the end of the evening the Toast-Master excelled himself by calling for silence for Air Vice-Admiral Sir Sefton Brancker, who immediately announced that it had always given him great pleasure to be associated with the Senior Service; and subsequently the T.M. craved silence for the Rt. Hon. the Lord Louis Manhattan. One supposes that he could not switch his mind off the subject of cocktails.

Altogether a highly successful evening.

The Australian Aero Club. NEW SOUTH WALES SECTION.

Report for week ending Oct. 16.

Total flying, 24 hrs. 35 mins. Number of flights, 84. Dual instruction, 7 hrs. 25 mins. Pupils' solo flying, 9 hrs. Pilot members' flying, 8 hrs. 5 mins. Pupils under instruction, 14. Pilot members, 8.

Dual for week: E. B. Wilshire 5 mins., R. H. Mitchell 15 mins., C. W. Perry 1 hr., M. Rosenfeld 25 mins., W. J. Pennell 50 mins., L. G. Carrick 50 mins., P. Penrose 10 mins., H. V. Chedgley 1 hr. 20 mins., D. Onslow 20 mins., J. T. Reid 40 mins., J. R. Palmer 30 mins.

Solos: S. Aourousseau 35 mins., E. B. Wilshire 15 mins., R. H. Mitchell 55 mins., C. W. Perry 30 mins., M. Rosenfeld 1 hr. 30 mins., W. J. Pennell 5 mins., L. G. Carrick 1 hr. 10 mins., M. C. Kent 1 hr., 40 mins., N. F. Stewart 1 hr. 15 mins., D. Onslow 5 mins., J. T. Reid 1 hr.

Pilot members flying: G. F. Hughes 35 mins., R. M. King 2 hrs. 25 mins., H. W. Ross 1 hr. 30 mins., R. W. Reid 1 hr. 5 mins., H. Hammond 30 mins., J. R. Gordon 35 mins., H. Royden 30 mins., S. L. Tyler 50 mins.

Report for week ending Oct. 23.

Total flying, 22 hrs. 45 mins. Number of flights 76. Dual instruction, 5 hrs. 5 mins. Pupils solo flying, 9 hrs. 5 mins. Pilot members, flying, 7 hrs. 55 mins. Pupils under instruction, 12. Pilot members, 6.

Dual for week: E. B. Wilshire 40 mins., C. W. Perry 5 mins., M. Rosenfeld 15 mins., H. V. Chedgley 1 hr., D. Onslow 25 mins., J. R. Palmer 2 hrs. 20 mins.

Solos: S. Aourousseau 25 mins., E. B. Wilshire 20 mins., R. H. Mitchell 50 mins., M. Rosenfeld 1 hr., L. G. Carrick 1 hr. 40 mins., M. C. Kent 1 hr. 20 mins., N. F. Stewart 2 hrs. 20 mins., J. T. Reid 1 hr. 10 mins.

Pilot members flying: H. Hammond 2 hrs. 50 mins., R. W. Reid 1 hr. 30 mins., P. M. King 1 hr. 15 mins., R. H. Boyden 50 mins., S. L. Tyler 50 mins., J. R. Gordon 40 mins.

Our Instructor is still keeping up his average of one pupil going solo per week. Mr. C. W. Perry did a most successful first solo flight after 8 hrs. 20 mins.' dual instruction, and Mr. J. R. Palmer did an excellent first solo flight this morning. His dual instruction was 6 hrs. 30 mins. This makes 13 pupils flying solo in a little over 12 weeks.

During the last two or three weeks the frequent strong winds have interfered with solo flying, but it is hoped that during this week 8 pupils will be put through their tests for "A" Licences.

The Controller of Civil Aviation has notified the Committee that he will be coming to Sydney during the week to put these pupils through their tests.

Our First "A" Licence.—We congratulate Mr. G. McC. Littlejohn on being the first pupil trained by the Club to obtain his "A" Licence, and also on being the first Club-trained pilot in Australia. His licence, No. 38, is dated Oct. 13, 1926.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 12; Tuesday, 12; Wednesday, 11; Thursday, 7; Friday, 12; Saturday, 14; Sunday, 1.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 29, passengers 96, freight 9 tons.

AIR UNION:

Paris—London: Machines 18, passengers 27, freight 13 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 10, passengers 7, freight 2 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 12, passengers 7.

PRIVATE:

Machines 3, passengers 3.

Total number of trips by British Machines, 29, carrying 99 passengers. Foreign Machines, 40, carrying 41 passengers.

Comparative Figures:

Week ending Dec. 5:

Machines, 69; Passengers, 140; Crews, 87; Total personnel, 227.

Corresponding week, 1925:

Machines, 42; Passengers, 91; Crews, 53; Total personnel, 144.

Corresponding week, 1924:

Machines, 69; Passengers, 168; Crews, 85; Total personnel, 253.

Corresponding week, 1923:

Machines, 19; Passengers, 38; Crews, 27; Total personnel, 65.

Corresponding week, 1922:

Machines, 60; Passengers, 130; Crews, 116; Total personnel, 246.

Corresponding week, 1921:

Machines, 29; Passengers, 36; Crews, 49; Total personnel, 85.

Corresponding week, 1920:

Machines, 22; Passengers, 33; Crews, 28; Total personnel, 61.

Croydon Notes.

The attention of the Great Ones of Imperial Airways Ltd. is now centred on the Cairo—Karachi route. The General Manager, and the Assistant General Manager, left for Cairo on Nov. 24 and they will be away for about two months; Mr. Dismore, the Secretary, is O.C. Imperial Airways until the return of the G.M.

The examination for second class navigators' certificates took place in London this week and pilots of Imperial Airways were to be seen in the Royal Aero Club in the intervals between sessions lapping up iced water, carrying little grey books, and muttering strange oaths concerning cosines and isobars. Some of them are sitting for the exam. with less than a month's work, which, as one of them remarked, "Taking it by the large, is a bit 'ard." But they have hopes.

Once again this year the Sunday services have been cancelled until the end of Winter time. The reason for this is said to be that the number of people who travel by air on Sunday in the Winter is not enough to fill one small machine.

One has not heard of any tremendous rush on the part of those concerned with the Aircraft Industry to avail themselves of Imperial Airways' offer to take them to Paris and back for the Aero Show for £8 8s. After all, three people can go to Paris and back by surface transport for less than £8 8s. third class, and get there for certain, even with French Railways, or one person can do it for £6 by train and boat de luxe. Imperial Airways might have persuaded more aircraft people to aviate if they had offered to take the Aircraft Industry at first class boat and train fares.

There would certainly have been room, for on Wednesday the Argosy had 12 vacant seats, on Thursday the Hampstead had 6 vacant seats, on Friday the Argosy had 8 vacant seats, and on Saturday the Hampstead had 6 vacant seats. There were 17 vacant seats back from Paris on both Friday and Saturday.

But aircraft people, being still unwealthy, went by train. So Imperial Airways were unable to convince the most sceptical section of the British Public that air travel is a good thing. Also potential constructors lost a chance of getting a first hand knowledge of the comforts or otherwise of air travel.

Flt. Lt. J. S. Chick and Mrs. Chick passed through Croydon on Wednesday on the Blackburne Bluebird (Armstrong-Siddeley Genet) bound for the South of France on their honeymoon. One wishes them the best of luck.

Incidentally, in reference to this flight, one of the daily papers says that the Bluebird is driven by an Armstrong-Siddeley "Gent." This conjures up visions of Mr. Proctor in the pilot's seat complete with top hat, morning coat, and white spats.

The hotel under the Barclay and Perkins régime continues to improve and there is now a sound of revelry by night. Incidentally, an invitation to a Barclay and Perkins' party at Croydon reminds one of the interesting fact that Mr. A. F. Part, formerly of Trust Houses Ltd., is mainly responsible for B. and P. taking a lively interest in the aerodrome and its doings.—G. D.

THE AIR MINISTER AND THE PELICAN.

As he was unable, owing to illness, to attend the ceremony on Nov. 15, of launching the seaplane Pelican, with which Mr. Gladstone is to run the experimental Khartoum—

MALLITE
THE AERONAUTICAL
PLYWOOD

STRONGER AND MORE DURABLE THAN METAL

For **AERO** and **SEAPLANES** manufactured to the

BRITISH AIR MINISTRY SPECIFICATION 2.V.3 by the

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are standardised by nearly all British car manufacturers.

They are being fitted to more and more *motor cycles*—after their convincing performance in the 1926 T.T. Races.

And—they are now conquering in the field of aircraft construction. Leading *aeroplane manufacturers* are selecting Dunlop Wired equipment—and they demand above all things *safety*.

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WOOD AND METAL.
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SAUNDERS' special form of construction for Flying Boats, Amphibians, Hulls and Floats, etc., has proved to be lighter and stronger than any other.

WE have built flying boat hulls up to 50-ft. long, complete skin in five pieces and floats complete in two pieces. Consider the advantages of this over any other known construction.

OUR Marine Craft hold the World's record for speed and durability, this year beating CANADIAN, FRENCH, AMERICAN and GERMAN boats.

Why not make use of our 96 years' experience of designing and constructing all types of light craft.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Kisumu route, Sir Samuel Hoare, Secretary of State for Air, sent the following letter to the Honourable William Ormsby-Gore, M.P. :—

I am sorry indeed that severe indisposition should have precluded my presence at the launching ceremony of the hydroplane which is to be used on the experimental service between Khartoum and Kisumu.

I am very glad that you have been able to perform the ceremony in my place, since this project is one which seems to me to be of the most far-reaching importance alike to the Air Ministry and the Colonial Office.

From the broad aspect of Imperial air communications, this service is the first link in what will ultimately be one of the most important routes in the Empire, viz., that from Cairo to the Cape, a route which should be of first-class strategic as well as commercial importance; whilst I am sure that the Colonial Office will welcome a scheme which will effect a radical improvement in existing means of communication between such important areas of the British Empire in East Africa.

Will you be good enough to convey to Captain Gladstone and those associated with him my best wishes for the success of his most important enterprise?

THE COLOMBIAN AIR MAIL.

The Postmaster-General announces that by arrangement with the Air Company concerned (Scadta), the present system under which letters and other packets intended for outward transmission by the above-mentioned service can be posted under cover addressed to the Office of that Company in Colombia, and prepaid in Colombian Air Mail stamps, will cease on Dec. 6; and, beginning on that date, official facilities for such letters will be provided. Under the new system, air postage must be prepaid in British postage stamps at the rate shown below, and the letter or packet must bear in the upper-left-hand corner a British official blue "Air Mail" label, or be plainly marked in manuscript "Air Mail."

Correspondence posted under the new arrangement cannot for the present be registered. The amount of the air postage payable (in addition to ordinary foreign postage at the rate applicable to the class of packet concerned) will be as follows:—On letters and post-cards 1s. per $\frac{1}{2}$ oz. (or fraction thereof), on printed and commercial papers, samples, etc., 6d. per $\frac{1}{2}$ oz. (or fraction thereof). Correspondence which is not fully prepaid with ordinary and air postage will be excluded from Air Mail transmission.

CIVIL AIR AFFAIRS IN PARLIAMENT.

AIR SERVICES IN THE WEST INDIES.

In the House of Commons on Nov. 29, in reply to a question by Sir H. BRITAIN, the SECRETARY OF STATE FOR AIR said that an Inter-Departmental Committee had been recently appointed to explore the opportunities which might exist for all the operation of civil air transport in the West Indies and their Report was now being studied.

IMPERIAL AIRWAYS.

In the House of Commons on Dec. 1, in reply to a question by Sir H. BRITAIN, the UNDER-SECRETARY OF STATE FOR AIR said that the number of passengers carried by Imperial Airways Ltd. during the year ended Oct. 31, was 16,635. He had no information in regard to the number of passengers carried by German civil air services during the corresponding period.

[And if he had the figures would be of no value. Comparing Imperial Airways traffic with German traffic is like comparing the traffic out of Penzance railway station with that out of, say, Manchester.]

MR. COBHAM'S PETROL.

In the House of Commons on Dec. 1, Mr. J. HUDSON asked the SECRETARY OF STATE FOR AIR whether he was aware that Sir Alan Cobham was prevented from using the petrol which the Australian Commonwealth public refineries at Sir Alan's request had deposited at the necessary landing points of the flight through Australia by a notification from the oil companies that if Australian oil was used they would refuse to let him have the petrol he would need on the return flight to London. And whether in the interests of civil aviation he proposed to take any action with these oil companies when further contracts for the supply of oil to the British Government were being considered.

SIR SAMUEL HOARE said that he had no official information on the subject.

PERSONAL NOTICES.

DEATHS.

CROWDEN.—On Nov. 30, at Colly Weston, Lincolnshire, as the result of a flying accident, Clarence Graham Crowden, Flg. Off., No. 19 Sqdn., R.A.F.

Mr. Crowden joined the R.A.F. with a S.S. comm. in July, 1924, and was posted to No. 2 F.T.S., Digby, for a course of flying instruction. He was posted to No. 19 (Fighter) Sqdn. in June, 1925. He was promoted to the rank of Flg. Off. last April.

EATON.—On Nov. 8, James Eaton, Plt. Off., No. 7 (Bombing) Sqdn., R.A.F., Bircham Newton, Norfolk.

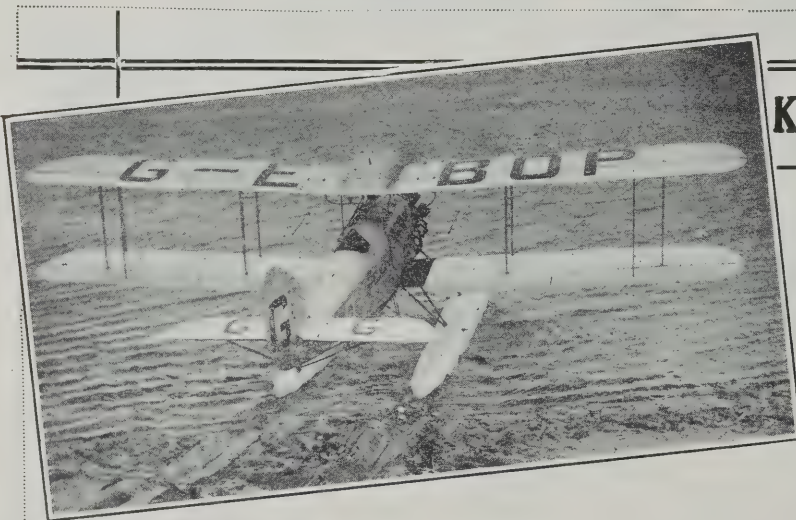
GILMORE.—On Nov. 1, at Aden, of typhoid, Flt. Lt. Sydney George Gilmore, R.A.F. Medical Service, Basrah Combined Hospital.

LANGRIDGE.—On Nov. 12, Sq. Ldr. Arthur Bracy Langridge, R.A.F. Sq. Ldr. Langridge was one of the Air Force Assistants in the Department of the Judge Advocate-General.

BIRTHS.

EKINS.—On Oct. 3, at Melbourne, Australia, to the wife of J. H. Ekins, Chief of the Aircraft Inspection Branch, Department of Defence, the Commonwealth of Australia, and late of the Air Ministry—a daughter.

HARKER.—On Nov. 28, at Chester, to Edith (née Ivey), wife of Mark Adamson Harker (late R.N.A.S.)—twin son and daughter.



Khartoum—Kisumu Air Line.

THE photograph shows the launching of the "Pelican," a De Havilland 50 fitted with Short floats, and a Bristol Jupiter VI engine, on November 15th, 1926.

This aeroplane is destined to inaugurate an air line between Khartoum and Kisumu, Uganda—the first air line to be organised by civilian enterprise in the Empire overseas.

To ensure the absolute reliability and minimum maintenance costs essential to passenger air-transport, this line will use—

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There is a CASTROL grade specially suited to your needs.

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All-British Firm,
Specialists in Motor Lubrication,
Wakefield House, Cheapside, London, E.C.2.

THE SUPERMARINE SOUTHAMPTON.



SUCCESS.—The first flight of the first Supermarine Southampton (two 470 h.p. Napier Lion engines).

The Southampton Flying-boat, fitted with two 470 h.p. Napier Lion engines, is one of the well-known products of the Supermarine Aviation Works Ltd.

This aircraft was designed by Mr. R. J. Mitchell, the firm's Chief Engineer, to satisfy the requirements of the British Air Ministry for a flying-boat to supersede the "F" type flying-boats then being used by the Naval Co-operation Flights of the Royal Air Force. At this time the British Air Ministry had very little faith in the flying-boat, due to the unsatisfactory results obtained from their service types, and there was every possibility that the flying-boat would not be further developed.

Work was begun in August, 1924, on the design and construction of the new Southampton flying-boat, and the first aircraft was flying on Mar. 14, 1925. The machine was an immediate and outstanding success. No modifications whatever were found to be necessary and the machine was delivered by air to the R.A.F. Experimental Station at Felixstowe on the following day. This feat of completely designing and constructing a large twin-engine flying-boat in a period of only seven and a-half months has been admitted on all sides to be a remarkable achievement.

The machine then went through its type trials at Felixstowe. Everything went "without a hitch," with the result that the trials were completed in record time and the Southampton was given a wonderful report.

The Southampton from this time was adopted as the standard Twin-Engine Reconnaissance Flying-boat of the Royal Air Force. By now a large number of Southamptons has been delivered, and many more are still on order.

Hardly had a flight of these machines been handed over to the Service than it was announced that they would undertake an extended cruise in conjunction with the Fleet around the British Isles. This cruise, which commenced on Sept. 3, 1925, was accomplished without incident and the success from the Service standpoint was such that on Oct. 8, 1925, the Air Ministry issued a special communiqué eulogising the boats. Among the many points brought out by this Report the following are worthy of special mention:—

During a gale on 15th September the three flying-boats landed safely at Campbeltown on completion of an exercise and refuelled from H.M.S. *Calliope* without any difficulty while the gale was still at its height. All flying-boats handled well on the water and rode well at their moorings.

The cruises have shown that under conditions of weather which must throughout be considered distinctly bad, the Southampton flying-boats are capable of keeping the air and carrying out such observations as visibility will permit. What is more important, it demon-

strates that a programme once having been drawn up, it can be adhered to practically independent of the weather. Refuelling at sea was carried out on all occasions without a hitch, and provided a certain amount of shelter is available when the flying-boats are not flying, it has been demonstrated that they can function successfully quite separately and independently of their land bases.

After this cruise of some 10,000 miles in very bad weather the Southampton came to be recognised as a real and dependable aerial auxiliary to the Fleet.

On July 1, 1926, began the first long distance foreign cruise by R.A.F. flying-boats to Egypt and back.

The complete success of this cruise was announced by the Air Ministry on Aug. 2, 1926. Two Southamptons each flew 7,000 miles from Plymouth to Aboukir and back and the previously arranged programme was completely adhered to with one exception that owing to a northerly gale at Marseilles it was considered advisable to postpone the departure thence for Plymouth until the following day. No trouble whatsoever was experienced, either with the aircraft or with the Napier Lion engines. A special feature of the cruise was that constant wireless communication was maintained throughout with R.A.F. and other wireless stations.

In summarising the results obtained from this flight the Official Report concludes with the following significant statements:—

The result of this cruise clearly demonstrates the feasibility of composing a time-table and programme, and adhering to it throughout without being impeded by conditions of weather, etc.

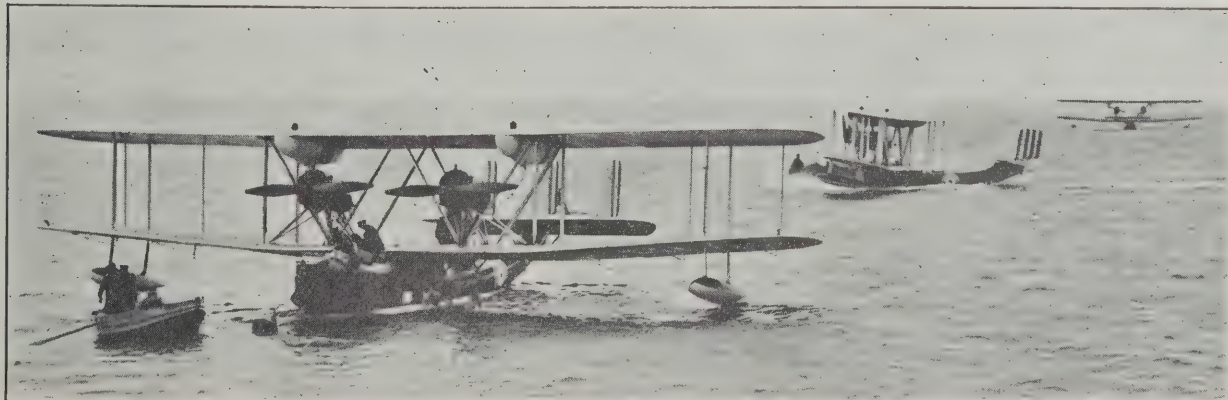
Further, it once more proves that these flying-boats are perfectly capable of long distance flights independently of their bases or of a parent ship.

The reliability of the communications throughout shows also that while the aircraft are in the air they can be in touch the whole time under normal conditions with shore stations.

To appreciate both these cruises it must be remembered that they were ordinary Service exercises with standard Air Force machines carrying throughout a crew of four and full Service load.

Thus the Southampton has been thoroughly and exhaustively tested out under stringent Service conditions. They have flown many thousands of miles, have been operated during exceptionally rough weather, and have been treated to the rough usage which must unavoidably be given to machines operated from Service stations and under Service conditions. The Southampton has now undergone its development troubles, and can be safely regarded as the most efficient and reliable flying-boat in the world.

For a description of the constructional features of the Southampton, see *THE AEROPLANE* for Nov. 24, 1926.



ON SERVICE.—Three Supermarine Southamptons (Napier Lion engines) picking up their moorings while engaged on a Service cruise round Great Britain.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



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Some
B.T.H. Magneto
Achievements
in 1926.

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Grosvenor Challenge Cup.

Shelsley Walsh
3 Premier Awards
200 Mile Car Race
1st—2nd

Brooklands 1926.

90 m.p.h. Short
Handicap. 1st.

90 m.p.h. Long
Handicap. 3rd.

100 m.p.h. Long
Handicap. 2nd.

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"Every year since our first entry in the famous I.O.M. T.T. Races, we have fitted your magnetos exclusively and each year gained either the Trophy or two second places. Never in the I.O.M. have we had a moment's trouble with any of your instruments, either during practising or the actual races." (Signed) F.W. Cotton.
The Cotton Motor Company.

Motor Cars

"The Trouble-Proof Magneto"

Enfield Trials.

1500 c.c. class — 1st
2000 c.c. class — 1st

Isle of Man Motor Cycle T.T.
Lightweight Race.
1st — 2nd — 3rd.

Grand Prix (Belgium) 1st.

South African T.T. 1st.

Scottish Six Days.
Team Prize.

Brooklands.

8 World's Records, Class A.
5 World's Records, Class C.
6 World's Records, Class D.
10 World's Records, Class F.

London-Capetown
and
London - Australia
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THE CIERVA AUTOGIRO COMPANY, LIMITED.

The Cierva Autogiro Company was formed early this year to develop the now well-known invention of Senor de la Cierva, the Spanish Engineer. The Company has established offices at Bush House, Aldwych, London.

The object of this invention was to eliminate the principal defects and dangers of the ordinary aeroplane. The great majority of aeroplane accidents are due to what is known as "stalling." When an aeroplane stalls it loses, practically speaking, all its supporting power and its control. Moreover, this characteristic of stalling and its results lead to the necessity for such skill in flying, and such large spaces for landing and take-off, that the elimination of stalling can be said to be a complete revolution in flying.

A further defect with the ordinary aeroplane is the lack of natural stability and the consequent difficulty and complication of controls.

In various demonstrations in Spain, England, France and Germany the experimental Autogiro machine has demonstrated that it overcomes, beyond any question, these main defects of the heavier-than-air aircraft.

The work of the Cierva Autogiro Company has, in effect, been divided into two parts. The first was to prove publicly beyond all question that the Autogiro, as a principle, performed all that was claimed for it.

The second part of the Company's work was to proceed with the developments necessary to apply these

principles to more practical flying machines, for it must be emphasised that the Autogiros which have, so far, been flying in public were merely primitive apparatus to demonstrate the principle.

The first part of this work has been accomplished satisfactorily, and it is generally recognised throughout the aeronautical world that this invention represents the most important event in flying since the Wright Brothers first flew.

The Company is now, therefore, engaged in carrying out an extensive series of experiments on the aerodynamical and mechanical problems which the new features of this system present. Apart from machines being built by or for different Governments the Company is constructing several experimental machines of its own. A great deal of information has already been collected and on completion of the experiments now being made it will be possible to give much more definite data for the construction of machines, of all classes, which will be able:—

1. To take-off and to land with little or no run,
2. To be incapable of stalling or of getting out of control,
3. To be extremely easy to fly and to handle,
4. To be simple and easy to construct.

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THE AEROPLANE—DEC. 15, 1925.

THE PARIS AERO SHOW.—II

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. Grey

Vol. XXXI. No. 24.

SIXPENCE WEEKLY.

Registered at the G.P.O.
as a Newspaper.

"DAS WANDERN."—(Schubert).



"IN SEARCH OF THE SUN." Mr. Neville Stack and Mr. Bernard Leete, of the Lancashire Aero Club, at the R.A.F. Aerodrome, Malta, filling up with petrol. They are flying towards the East on De Havilland Moths (A.D.C. Cirrus Mk.II engines). They have been detained at Malta for some days by severe storms. The route which they are using is that which will be followed by the D.H. Hercules quintet bound for Cairo.

Fit Palmer, there's no better tyre!

Palmer wheels and tyres were fitted to every British Aeroplane which left England during the Great War, they have been the standard equipment on British Aeroplanes ever since. See page 792 for details of twenty sizes, from 375 x 55 to 1750 x 350, covering the requirements of every type of machine.

(193)

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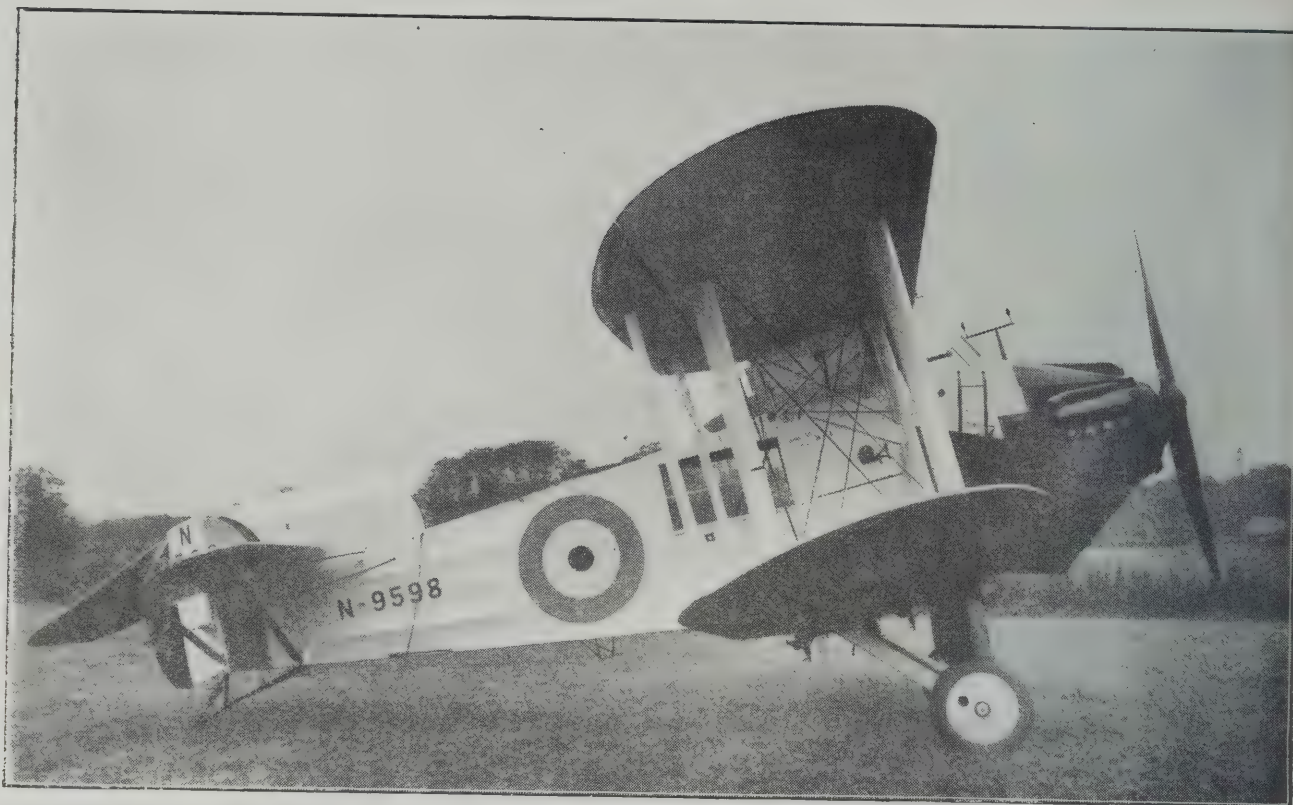
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AVRO "BISON."

The Avro "Bison"

Gunnery Spotting and Fleet
Reconnaissance Aircraft.

This aeroplane has been expressly designed for fleet co-operation, particularly in regard to gunnery spotting and reconnaissance generally.

A particular feature of its design is that it can be landed on the deck of an aircraft carrier and it is, in fact, one of the safest aeroplanes for deck landing which have yet been constructed.

The pilot is seated below the leading edge of the top main plane and from this position he has an excellent view for landing. Behind him is the top rear cabin with large windows on each side to facilitate observation. Behind this cabin on a raised platform is the gunner's position from which he may communicate directly with the cabin. In order that observation may be carried out in close co-operation with the pilot, a sliding hatch is arranged in the roof of the cabin behind the pilot's cockpit.

The engine mounting is a separate unit and it is possible to remove it completely from the machine with the engine, when the mounting can serve as a bench on which to stand the engine on the floor of a workshop.

The pilot's cockpit is an entirely separate unit, and is mounted directly on the top forward longerons of the fuselage.

The main planes are built up on spruce spars with warren girder ribs and tubular steel drag struts. They are arranged to fold in order to minimise housing space on the deck of an aircraft carrier.

The interplane struts are of tubular steel with wooden fairings.

The main planes are of a special high-lift type, and this feature combined with the remarkably powerful and accurate controls produce in a marked degree the qualities necessary for deck landing.

The undercarriage is of the Oleo and compression rubber type, specially developed to withstand the heavy shocks which are inseparable from deck landing.

The rear portion of the fuselage contains flotation bags and an emergency signalling apparatus is carried in a suitable locker in the tail plane.

The following are the performance figures:

Top Speed 108 m.p.h. Landing Speed ... 46 m.p.h.
Climb ... 600 ft. per minute. Range 4 hours.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Avro "Aldershot"

Single Engined Bomber.

The Avro type 549 has been expressly designed for long-distance bombing. Its exceptional stability makes it particularly suitable for night operation, and it has in fact been extensively used in England for night flying with very good results.

The fuselage is large and affords ample space not only for the stowage of military equipment, but permits the careful arrangement of the bombing position.

It has also been possible to arrange for very complete defensive armament in order to minimise the necessity for a fighting escort.

In view of its large size, the fuselage is built in sections, in order to facilitate transport and repair. All the crew are situated behind the main planes and their positions are such that parachutes may be used readily.

The fuselage is built with a double deck, the lower deck forming the bombing position and the wireless and navigation cabin, while the upper deck accommodates the pilot and navigator at the forward end and the rear gunner at the after end. All members of the crew can move freely about from one deck to another.

The main planes are built on spruce spars with Warren girder ribs and steel drag struts. The outer planes are arranged to fold back in order to reduce storage space.

If desired, all-metal wings can be supplied. The wing fittings, however, are of special design so that in case of shrinkage of the wooden spars in a hot climate, they can be easily tightened up.

The tail plane is mounted well above the fuselage, in order to obstruct the rear gunner's view as little as possible. Complete tail controls are fitted, and the tail plane incidence can be adjusted during flight.

The aileron control is operated on the differential principle which minimises any tendency to yaw.

All these factors combine to produce the large degree of stability which is necessary for precision bombing.

The following are the performance figures:

Top Speed 110 m.p.h. Landing Speed ... 50 m.p.h.
Climb ... 560 ft. per minute. Range 6 hours.

A. V. ROE & CO. LIMITED,



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Avro "Andover"

Ambulance, Troop Carrier
or Freight Machine.

The Avro Andover may be equipped alternatively as an Ambulance, as a Freight-carrier or for Passenger Transport.

The cabin is of large dimensions (6.69 metres long and 1.42 metres wide with 1.8 metres clear head room). In addition a baggage compartment and a lavatory are provided at the rear end of the cabin. It is possible to arrange the cabin to accommodate twelve passengers, or if desired, fewer passengers and a corresponding load of freight can be carried. Large windows along each side of the cabin allow a good view for the passengers, and the door, owing to the method adopted for the construction of the fuselage, can be made in a variety of sizes and shapes to suit the particular purpose of the machine.

In flight the Andover is stable and steady, and is light and easy to handle on all controls, so that the pilot does not become unduly fatigued during long flights.

The pilot's cockpit is situated just below the leading edge of the top centre section plane, and he has an excellent view in all directions, particularly for landing. The navigator's station is alongside the pilot's seat, but at a lower level, with direct access to the main cabin by means of a door in the sound-proof bulkhead which separates the cabin from the nose of the fuselage.

The engine mounting is bolted to the front of the fuselage and the engine is isolated from the pilot's cockpit by a fire-proof bulkhead. Efficient engine silencers are fitted, and

these, combined with the soundproof construction of the cabin, make it possible for the passengers to converse without difficulty.

The main planes are of mixed wood and metal construction, and a special feature is the method of attachment of the tubular steel drag struts to the wooden main spars. The attachment fitting is so made that it can be tightened up in the event of shrinkage of the spars in a tropical climate. The planes are arranged to fold in order to economise housing space. All covering is of linen, doped.

The petrol system is entirely gravity. The petrol tanks are two in number and are carried one under each top main plane.

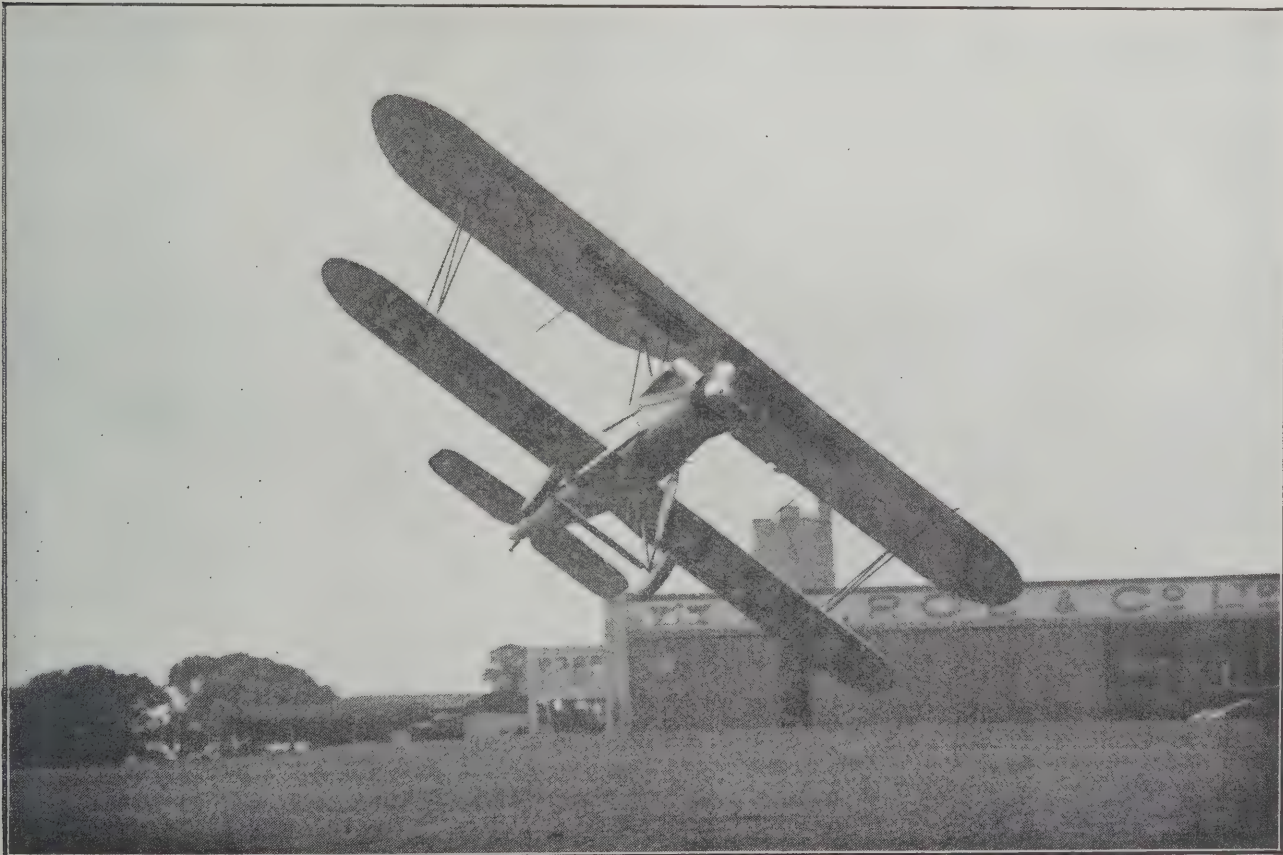
The undercarriage is of a specially developed Oleo type, incorporating rubber in compression. This type of alighting gear has been proved to be most efficient, and heavy landings can be made without inconvenience to the passengers. The tail skid is sprung by means of rubber in compression.

The following are the performance figures:

| | | | |
|-----------------|---------------------|-------------------|-----------|
| Top Speed | 110 m.p.h. | Landing Speed ... | 52 m.p.h. |
| Climb ... | 540 ft. per minute. | Range | 6 hours. |

Avro "Ava" & "Avenger."

Two Avro machines about which little can be said at the moment are the Ava and the Avenger. The former is a multi-seater twin-engined night bomber and coastal torpedo defence landplane fitted with two 670 h.p. Rolls-Royce Condor III engines. The latter is a single-seater fighting scout fitted with a direct-drive 525 h.p. Napier Lion VIII engine. This machine has a remarkable turn of speed.



AVRO "AVENGER."

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This photograph was taken during the Grosvenor Cup Air Race when the Westland Widgeon achieved the fastest time for the course—105.5 m.p.h. and the fastest individual lap—106.8 m.p.h.

The WESTLAND “WIDGEON”

FOR eleven years we have been designing and building aeroplanes, and to-day the reputation of Westland Aircraft for safety, speed and comfort is world-wide.

Our designs comprise all types from private single-seaters to large twin-engined bombing machines.

In these days road travel is anything but pleasant. By owning a light aeroplane you can recapture the joys of travel. We intend to publish shortly particulars of “Widgeon III,” a light passenger Monoplane which will be within reach of the man of moderate means. The

machine folds, and will go comfortably into an ordinary garage. Widgeon II is illustrated above and is a remarkably successful example of modern aircraft construction. The specification is given herewith.

SPECIFICATION.

| | | | |
|---|----------------------|--|--|
| Leading Weights and Dimensions : | | | |
| Weight, fully loaded ... | 1,150 lbs. | | |
| Weight, light, without fuel and oil ... | 640 lbs. | | |
| Fuel Capacity ... | 12 gallons. | | |
| Useful load apart from fuel and oil ... | 380 lbs. | | |
| Surface ... | 145 sq. ft. | | |
| Span ... | 30 ft. 8 ins. | | |
| Width, folded ... | 9 ft. 9 ins. | | |
| Length ... | 20 ft. 5 ins. | | |
| Petrol consumption ... | 20 Miles per gallon. | | |

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1926.

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ON THE ATTACKS ON THE AIR MINISTRY.

Misdirected attacks on the Air Ministry are so common that we could afford to ignore them but for the fact that occasionally they take such a form that they are likely to affect the moral of the personnel of the R.A.F. The veteran pilots and air mechanics of the War 1914-18 are left cold by most of these attacks, with the exception of a few disgruntled officers and men with Bolshevistic tendencies who use such attacks deliberately with the intention of upsetting the loyalty or discipline of their fellows. But there are young officers and young mechanics and apprentices who read these attacks and because of their own ignorance are influenced by them, consciously or unconsciously. Also the parents and other relatives of the personnel of the Air Force are liable to be put into a panic by such attacks.

Therefore it seems well worth while to return once more to the question of accidents in the R.A.F. when a paper of the importance of the *London Daily Express* comes out, as it did on Wednesday last, December 8, with a heading right across the front page—

ANOTHER ROYAL AIR FORCE TRAGEDY,
and heads its first double-width columns thus:—
DEMAND FOR AIR INQUIRY
DEATH ROLL MOUNTING WEEK BY WEEK
SERIOUS CHARGES
CRITICISMS OF OFFICIAL METHODS.

These double-column headings convey in a few seconds to any moderately intelligent but ill-informed person certain definite ideas.

The first suggests that a number of people of social, political and commercial importance are banded together with a determination to force on the Government an air inquiry similar to that which was held in 1916.

The second suggests that the number of fatalities in the Air Force is greater than it should be in proportion to the number of people in the R.A.F. who fly and in proportion to the amount of flying which they do.

The third suggests that charges of incompetence, or actual malfeasance of trust, or at any rate dereliction of duty, are made against some person or persons unnamed.

The fourth suggests that several people, whose competence to judge aeronautical matters is above question, have actually criticised something or other in the official methods of handling R.A.F. personnel and matériel and are prepared to show that those methods are responsible for the number of accidents.

THE DANGER OF CRITICISM.

One does not for a moment wish to imply that it was the intention of the responsible editor of *The Daily Express* to make such suggestions. One merely says that those are the ideas which reading those headlines put into one's own mind and that therefore other people have probably obtained similar ideas from them. And one does definitely believe that such ideas, if they take hold of the personnel of the Royal Air Force, are subversive of discipline and destructive of moral.

One acknowledges freely that on various occasions articles which have appeared in *THE AEROPLANE* attacking certain departments or certain methods in the Royal Naval Air Service, and in the Royal Flying Corps, during the War 1914-18 have laid one open to precisely such charges oneself. But those articles in *THE AEROPLANE* were written with a full knowledge of the facts. And the reforms which followed those attacks on official mal-administration or stupidity proved that one's criticism was justified.

In this particular instance the attacks by *The Daily*



CRANWELL CADETS.—Air Chief Marshal Sir Hugh Trenchard, G.C.B., D.S.O., Chief of the Air Staff, inspecting the passing-out term of Flight Cadets at the R.A.F. Cadet College, Cranwell, on Dec. 10. Immediately behind Sir Hugh Trenchard is Flight Cadet J. Clarke, the winner of the Sword of Honour, and in the middle of the group of senior officers is Air Commodore F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., Air Officer Commanding R.A.F. Cranwell, and Commandant, Cadet College.

Express, and by various other newspaper critics of the Air Ministry, are not justified.

Nobody, least of all the High Command of the R.A.F., is going to pretend that everything in the Air Force is perfect. There is always room for improvement in every human organisation. Everybody, most of all the Air Council, would like to see the R.A.F. free from all accidents. But accidents must happen now and then.

Some of the accidents which have happened during the past twelve months could have been avoided if the technical departments in the Air Ministry had been more intelligent, or if they had set to work promptly to make improvements in certain directions instead of waiting and waiting in the hope of achieving what they imagine will be perfection. But there is a world of difference between hustling the technical people into doing their jobs more quickly and making sweeping charges, as *The Daily Express* has done, against the whole administration of the Royal Air Force.

The Daily Express is perhaps the most influential of the lower priced daily papers. And one believes that it has a bigger circulation in the London area than any other newspaper. In one's own estimation it is by far the most entertaining and best written of the penny papers. And as it is not given to stunts it is bound to carry more weight than papers which are so inclined.

Also, one has a great respect for *The Daily Express* because in the earliest days of aviation it dealt largely and sanely with aeronautical subjects, and throughout the War 1914-18 and since the War it has given a large amount of attention in a properly informed and yet eminently readable way to the progress of aviation.

Therefore one is the more sorry to see it adopting this particular attitude towards the Air Ministry. And one feels that whichever member of the editorial organisation is responsible for this attack has been misled by people who have not so much axes to grind as axes to use against the Air Ministry or against senior officers of the R.A.F.

WHY SOME AEROPLANES BREAK.

The accident which is made the spear-point of the attack is the death of Flying Officer G. V. Wheatley at the Aeroplane and Armament Experimental Establishment at Martlesham Heath, when the wings came off a Gloster Gamecock.

Naturally the wings should not fall off an aeroplane under any ordinary Service conditions. But it is well to remember that it is practically impossible to make an aeroplane which will not break under extraordinary conditions. And it is for the purpose of testing aeroplanes under extraordinary conditions that the Experimental Station at Martlesham exists.

One of the problems which has been troubling aircraft designers of all nations since 1918, during which period

speeds have increased so enormously, is what is known as "wing-flutter." An aeroplane may behave perfectly correctly under normal conditions, but when its nose is put down and it is made to dive at very high speeds the wings may begin to flutter and if they do so they will eventually break away.

Many pilots have been killed through this cause. After some had been killed and others had had narrow escapes, several American Army test pilots at McCook Field, greatly daring and full of faith in their parachutes, made experiments to find out precisely what happened when wings fluttered and broke in this way, and deliberately dived their machines till the wings broke.

All of them escaped with their lives, thanks to their parachutes, and as a result American designers have acquired such knowledge that wing-flutter has apparently been entirely eliminated from the American high-speed pursuits and fighters.

Certain British aircraft have of late years developed wing-flutter, and though in the majority of cases pilots have managed to land before their wings have broken, or have regained control of the fluttering wings, they have had very unpleasant experiences when the wings have taken charge and pulled the control stick out of their hands.

The problem is comparatively new and is, in this respect, and in its effect, not at all unlike the problems of "tramping" and "gold-fishing" in relation to the steering of cars at high speeds, caused by the fitting of balloon tyres, which problems are still puzzling automobile designers in the United States and in this country, and causing a great number of deaths among motorists,—which deaths have passed unnoticed merely because people are accustomed to being killed in motor-cars.

Our test pilots of the R.A.F. at Martlesham and Farnborough and elsewhere, have, like the Americans, deliberately risked their lives by diving their machines to breaking point—to discover various facts about design and construction. In this particular instance Mr. Wheatley was apparently unable to get out of the machine and use his parachute and so he was killed, like the late Flt. Lt. Junor, with his parachute unused.

As a result of these dangerous experiments in this country, and others, a certain number of our more intelligent aircraft designers believe that they have learned how this fatal wing-flutter may be stopped in future designs. And if their claims are justified it means that the brave men who have made the tests from which these facts have been learned will have saved the lives of hundreds of pilots in the next air war, besides saving the lives of future pilots, who in carrying out tests for other reasons altogether, or merely in fighting practice, may reach speeds and get into attitudes which would otherwise cause wing-flutter and fatal accidents.



AN INSPECTION AT CRANWELL.—Sir Hugh Trenchard inspecting the Airmen at Cranwell. Air Commodore Halahan, A.O.C. Cranwell, is seen on the right.

One has set forth all these details merely to show that here was a case in which nobody was to blame for the accident except aerodynamic scientists in general, who have no excuse for being so ignorant about their own science.

To use such an accident as an excuse for an attack on the Air Ministry was entirely unjustifiable. It would be equally just to attack the Ministry of Health because certain brave doctors experimenting with X-rays have died of dermatitis.

THE SUBSTANCE OF ATTACK.

Having said so much we may now proceed to the substance of the attack in *The Daily Express*. It begins thus:—

No reputations must stand in the way of truth.

There must be no official protection of incompetent officers, no matter how high their rank.

There must be no interposition of red tape.

The entire administration of the Royal Air Force must be subjected to an investigation that is fearless, either of departments or of personalities.

With the plain conditions stated one is entirely in agreement. Nobody's reputation should stand in the way of truth and there should be no official protection of incompetent officers. But anybody who knows the Members of the Air Council, namely the Chief of the Air Staff, the Air Member for Personnel, and the Air Member for Supply and Research, knows perfectly well that such injunctions are an implied insult to them.

They would be the last persons in the World to stand in the way of a full and complete inquiry if such an inquiry were necessary. In fact if there were any kind of a genuine demand for an inquiry they could only oppose it on the grounds that such an inquiry would be sheer waste of money and would take up a lot of the time of officers who would be very much better employed in attending to their jobs in the Air Force.

After the lines just quoted comes the following passage:—
A distinguished flying officer made serious charges last night to *The Daily Express*.

"There is far too much red tape about the R.A.F.," he stated, "and far too little of the real flying spirit in the high command. Squadron commanders are worried to exasperation by regulations and headquarters' chits. It is much worse than at any time in the war or in any other service. A squadron commander's full energies are taken up with administrative routine, when flying should be his constant concern."

"Although the latest accident appears to have been the fault of the machine, this is not usually the case, nor is it the mechanical inspection which is necessarily the trouble. The fact is that the new types of flying machines are much faster than the old, and no pilot should be sent up in them without at least 100 hours' solo flying in a safe, training type. That has been the cause of most of the other crashes this year."

A REPLY TO THE ATTACK.

Now this is precisely the kind of thing which does so much harm not only among the general public but among the inexperienced officers and men of the R.A.F. They take it for granted that the man quoted is in fact a distinguished flying officer whereas to anybody who knows the Air Force it is evident that the man is both a fool and untruthful. He may have been distinguished for his flying, but he can never be distinguished for his intelligence or his accuracy of statement.

Possibly there may be a little too much red tape in the R.A.F., but that is inevitable in any small service which has to carry the overhead charges of a Staff organisation designed to administer a force about ten times as large. The Air Force is in fact in the position of, say, a motor-car factory with an output of one car a day which is carrying the mass-production organisation of a factory which is intended some day to expand to an output of a car an hour. So necessarily there is a certain amount of paper work which would not be necessary if the R.A.F. were intended to remain always, as at present, of a size such that the Air Marshal commanding could remember the Christian names of every pilot officer in the Force.

To say that there is too little of the real flying spirit in the High Command is just a plain unmitigated lie. If one takes the list of Air Vice-Marshals who hold the higher commands one finds that not only are almost all of them quite regular flyers as passengers but that several of them are actually among the best pilots in the R.A.F. in spite of their age and seniority.

If they do not in these days do much piloting it is not for lack of inclination, but simply because they have too much work to do, and piloting is not part of their job. Even the most enthusiastic car-driver, if he happens to control a big business, is rather apt to employ a chauffeur so that he may conserve his nervous energy for the conduct of that business.

No doubt some Squadron Leaders are worried by regulations and forms and ceremonies, but the type of man who makes the best leader of a band of braves in a war is by no means the type who is best suited to administer a unit in time of peace. Any fool can lead an attack, but it takes a man

with common sense and brains to look after the moral and bodily welfare of anywhere between 500 and 1,000 airmen, and to see that they get their food properly and wash behind their ears, and that they pay proper attention to their work.

In that excellent book, "The Silences of Colonel Bramble," one of the characters remarks that only in time of peace is it possible to discover the true soldier. And that remark applies equally well to the discovery of the true Squadron Leader. Which goes to show that the "distinguished flying officer" quoted by *The Daily Express* is a fool.

As to his idea that no pilot should be sent up in a fast machine without having done at least 100 hours' solo flying in a training machine,—if he could get at the figures he would probably find that very few pilots of single-seat fighters are ever allowed into such machines until they have done a good many more than 100 hours' flying.

Also our new machines are not much faster than the old. And it is not on the fast machines that most of the accidents happen.

And it is not the new types of flying machines which are so dangerous. It is the overloaded old types which cause most of the trouble. If this distinguished flying officer had taken the trouble to look through the lists of accidents on such approximately modern machines as are in the possession of the Air Force, he would find that most of the people who have been killed on them have been quite experienced pilots.

ANOTHER MIS-STATEMENT.

Following this charge, the *Express* has a wonderful story about "a £20,000 Vickers Virginia bomber" landing in a London aerodrome, and after three tries coming to a stop two feet from the edge of a river—presumably at Brooklands. The *Express* then says that the pilot in charge had been given less than 25 hours' solo flying previous to taking charge of this costly machine. The probability is that the said pilot, in addition to hundreds of hours on training machines, had had many hours' flying as second pilot on Virginias so as to give him plenty of practice in landing before he was allowed to take the machine out alone.

No amount of practice on training machines would help him in the least in flying or landing a Virginia. The vast difference between landing these big bombers and any ordinary machine is shown by the fact that after a pilot has had the necessary number of hours of training as second pilot on a big bomber he is then sent up quite alone in the machine so that he may get used to it at the risk of his own neck, before he is allowed to take up a crew of airmen.

TECHNICAL TRAINING.

Further on the *Express* says:—

Experienced pilots also contend that no officer should be given command of a flight, much less a squadron, until he has taken a special technical course. At the present time the majority of squadron officers are not qualified to carry out a technical inspection, except of the most superficial nature.

It is pointed out that if officers were technically qualified, and devoted more time actually to flying, they would be able to instil complete confidence in the flying personnel under their direction, as well as maintain a high degree of efficiency in their units.

An interesting point about this criticism is that ever so long ago the Chief of the Air Staff announced definitely that in order to earn promotion officers must have technical knowledge, and that his ultimate aim was to make every Air Force officer a competent pilot and a trained engineer. This announcement produced promptly an outcry about the impossibility of making everybody into engineers, and something very like an agitation was started in favour of forming an engineer branch in the R.A.F. so that squadron leaders and flight lieutenants who had no taste for engineering might devote themselves to administration and flying.

As for the suggestion that officers ought to devote more time actually to flying—there is a definite regulation in the Air Force at the present time that every officer must do a certain amount of flying, and that if he is not a competent pilot he cannot be promoted and must resign on reaching a certain age.

DRILL AND DISCIPLINE.

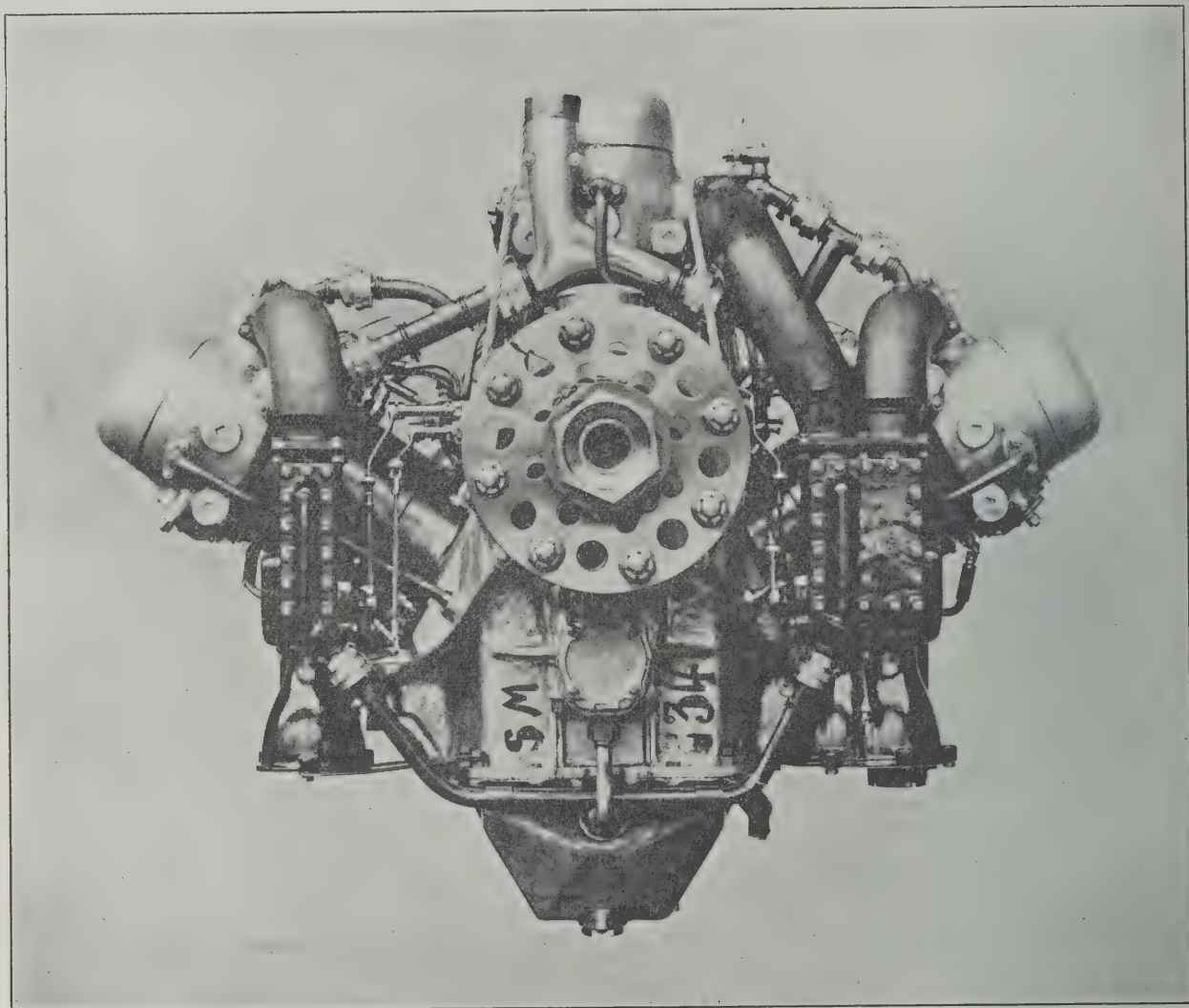
Finally comes the usual bleat about drill and discipline as follows:—

"The R.A.F.," said a former wing commander to *The Daily Express* last night, "is always on active service. But the high command always wants to be on parade or in orderly rooms. Flying, more flying, and yet more flying, is what we want, directed by flying men who have the flying spirit, and who know the whole business from the ground up."

This is the old complaint of the discontented officer who has been a failure in the Air Force and has left because he could not earn promotion. One would merely ask those junior officers and men who believe in "flying, more flying, and yet more flying" what would happen to an R.A.F. unit or detachment moving as a body in the streets of an English town, or entraining at a railway station, if it did not know how to comport itself on parade?

One would also ask what would happen to an R.A.F.

THE FAMOUS LION.



THE COMPLETED ARTICLE.—Front view of the Napier Lion aero engine.

Reliability in an aero engine is undoubtedly its most essential feature. No matter how high the performance and how excellent the aeroplane, without reliability it is impossible for success to be achieved.

With an aero engine, therefore, it is more important than with any other form of engineering for meticulous care to be taken in manufacture.

One of the most famous firms engaged in the construction of aero engines, is D. Napier and Son Limited, of Acton, London. So successful has this firm been with this side of engineering, that they decided to concentrate all their resources on the construction of aero engines.

That they have obtained reliability to a high degree with their engines is proved by the continuous successes gained in all branches of aviation by machines engined with the most famous of their products, the Napier Lion.

Thoroughness is the keynote in its construction, and the inspection side of the factory has been organised to such a high pitch of perfection that, as far as is humanly possible, no error can creep into its construction.

To one who has had the privilege of inspecting the Napier Lion in course of manufacture, it is a revelation to see the great care that is taken in every detail, the thoroughness of every operation, the high grade of material that goes into the factory and the highly skilled workmanship that is employed. When one considers all these points it is not surprising to find that the Napier engine holds such a supreme position in the World of Aeronautics, and it is not to be wondered at that

one can point to a list of achievements with this engine unapproached by any other engine in the World.

In our last week's issue, reference was made to the more recent achievements to the credit of the Napier. This week, one would wish to refer to some of the many types of aircraft employed by the Royal Air Force which are fitted with this famous engine.

All types from the single-seat fighters to the giant multi-engined bombers and troop carriers are engined with Napiers.

Two of the latest type single-seat fighters which are now being tried out by the British Air Ministry—the Gloster Gorcock and the Avro Avenger—are fitted with the Napier Lion. These machines are stated to be two of the fastest fighters in the World. One is not able to give figures as to their performance, but it is believed they show a great advance on previous machines of this type.

Of the two-seater reconnaissance class such famous machines as the Fairey Fawn, which visitors to the Air Force Display in recent years have seen giving such an excellent display of formation flying, are fitted with the Napier Lion.

Among the heavy bombers and troop carriers of the Royal Air Force, such proved machines as the Vickers Virginia, Vickers Victoria, Vickers Vernon and Handley Page Hyderabad, all rely for their motive power on the ubiquitous Lion.

Torpedo carriers built by famous firms for the Air Ministry include the Blackburn Dart and Handley Page Hanley, whilst

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

in the fleet spotter class engined with the Napier the Avro Bison and Blackburn Blackburn are successful types.

Of seagoing craft in use by the Royal Air Force perhaps the most successful is the famous Supermarine Southampton. This is a five-seater reconnaissance flying-boat fitted with two Napier engines. This is the only twin-engined boat in the World which can be flown successfully on one engine without losing height.

Amphibian machines which have been employed with a high degree of success are the Supermarine Seagull, the Vickers Viking, Parnall Puffin and Fairey Pintail, whilst amongst seaplanes perhaps the best known in the Service is the Fairey IIID. All are fitted with the Napier Lion.

Such a general use of the Napier engine shows how successful and reliable this engine has proved itself.

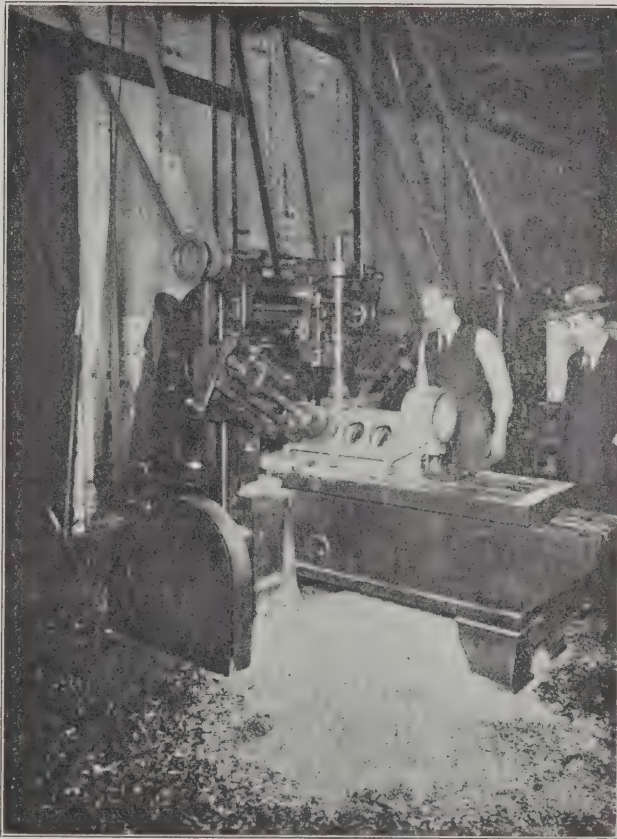
Quite apart from its popularity in the Royal Air Force—or is it because of it?—the Napier Lion is employed in twenty countries outside Great Britain. It is particularly gratifying to find such practical proof in all parts of the World of the general acknowledgment of the superiority of British Engineering. There is no other engine which can with equal right make such a claim to the title that it is the Finest Aero Engine in the World, as the Napier Lion.

Undoubtedly the Napier Lion has to-day reached a very advanced stage in aero engine development. There is no other engine which has been so consistently developed and improved over such a long period as this engine. Further, it has not been merely tried out in bench tests, but on actual service—Royal Air Force, Civilian and Racing.

In addition to the standard geared Lion the Napier Company now manufacture a direct drive model which bids fair to be as popular in its sphere as the famous Lion. It is also from this famous Acton factory that the 1,000 h.p. Napier Cub was produced, which is the only engine of this high power to take the air successfully.

When specially fast machines were designed for racing purposes, it was the Napier Company who were approached to supply the engines of high power with light weight.

The Napier Company might well feel proud of their famous products. They have done much to prove the reliability and efficiency of British aeroplanes and much of the freedom from trouble of the British Civilian Air Lines is due to the famous Lion.



THE NAPIER LION IN THE MAKING.—Machining the crankcase.



CHECKING UP.—One of the View rooms in the Napier factory, checking camshafts, etc.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

detachment in hostile country, as for example if sent out into the desert to salve a wrecked machine, or cut off from the main body during the swing of the fighting line in the mobile warfare of the future, if the officers and men had no training as infantry soldiers.

How a man so completely ignorant of war conditions ever acquired the rank of wing commander might be difficult to explain if one did not know that the siege-warfare conditions of the War 1914-18 gave opportunities of promotion to men who were simply leaders of air fighters although they were utterly ignorant of any other aspect of war.

The R.A.F. does far more flying in proportion to the numbers of its pilots than does any other Flying Service in the World. Its men are better trained as mechanics and as ground fighters than are the men of any foreign service. And in due course, no doubt, the ambition of the High Command to make every officer a reliable pilot and competent as a supervisor of the work of aircraftsmen, will be fulfilled.

OUR TECHNICAL WEAKNESS.

Our weakness, and the cause of most of the fatal accidents in the R.A.F., lies entirely in the Technical departments, which are manned almost altogether by civilians, though a certain number of these civilians use military titles, thanks to the fact that during the War 1914-18 they were put into uniform so that they might not be dragged from their office chairs by a War Office wishful to thrust them into the rigours of active service.

If the whole lot of them were cleared out, and if their work were put into the hands of serving officers with experience of aircraft in the field and in the air, and if the experimental and development work were done by the various firms in the Aircraft Industry in collaboration with these serving officers, we should make much more rapid aeronautical progress and we should save a large number of lives.

Even those accidents which are ascribed to "errors of judgment" on the parts of the pilots generally happen because the machines are only safe for pilots who know the tricks of those machines. And it is the fault of our technical experts that all our machines are not much more nearly fool-proof than they are.

The serving officers know what they want. And they know enough about the technical side to know whether they are getting it or not. The Aircraft Industry knows, or ought to know, how to supply what is wanted. So there is practically no need for any of the Air Ministry "experts" in between.

QUESTIONS IN THE HOUSE.

On December 9 Mr Hore Belisha, the Liberal M.P. for Devonport, asked the Prime Minister whether he would allot a day in Parliament to discussing the position created by the continued sequence of accidents in the Air Force. Mr. Baldwin, though deeply deploring such accidents, said that he was satisfied that every possible precaution was taken and would be taken to safeguard the lives of the R.A.F. personnel. And he courteously but definitely refused to give time for such a discussion.

Herein Mr. Baldwin showed his usual sound common sense. No amount of talk in the House of Commons could possibly do anything towards improving the state of affairs in the Air Force. Everything that can be done under existing conditions to prevent accidents is being done. But time must be allowed to those in high position to make the improvements which are necessary.

There is no possibility in an establishment such as the Air Ministry to adopt the "sack the lot" policy which the late Lord Northcliffe was so fond of advocating in his group of newspapers as the cure for all evils, civil and military. And in any organisation sacking the lot can only produce chaos, which is no real improvement on muddle.

Earlier in this article and at various times for a number of years one has indicated where improvements can be made. And slowly but surely these improvements are being made. But, just as one small piece of dirt in a carburettor jet may cause a forced landing and the wrecking of an aeroplane and the death of its crew, so one inefficient official in any of the many departments of the Air Ministry may cause a block in the improvements or reforms which are in progress in the department in which he serves.

The difficulty for those in high places, as for example for the Air Council itself, is to discover where these obstructors of progress exist.

One could name possibly half-a-dozen obstructors off-hand oneself, and yet anything in the nature of an official investigation would probably discover that each and every one of those officials was doing his work honestly to the best of his ability. And few things are more difficult than the dismissal of a Government servant, whether permanent or temporary, who is doing his best and cannot definitely be charged with any deliberate neglect of duty.

THE SEAT OF THE TROUBLES.

Quite definitely the causes of almost all the accidents can

be traced to the Department of Supply and Research. That is to say, either the machines may be overloaded, which is obviously a matter of their being supplied with too much stuff to carry, or they may be technically wrong, which is the fault of the Research people.

The same machines fitted with lighter equipment might not be overloaded. In such case the Research people are to blame for not discovering lighter equipment and the Supply people are to blame for issuing unnecessarily heavy equipment.

Also the Supply people are to blame for supplying reconditioned machines of antiquated types. Again the Research people are to blame for not discovering obvious methods by which such machines could be made far safer, even when overloaded. Also the Research people are to blame for not making quicker progress in the discovery of new and improved types of machines to replace the obsolete types which are still in use.

And the Research people are also to blame for not discovering, with the help of the Aircraft Industry, machines which are more controllable under certain conditions in the air, as for example when stalling or spinning or slideslipping. And the Supply people are to blame for not hustling the Research people into discovering such improved and fool-proof types.

Similarly, as concerns machines which break in the air, the Research people are to blame for not having acquired enough knowledge to prevent such accidents and the Supply people are to blame for allowing such machines to go into service.

IMPROVEMENTS IN PROGRESS.

The present Air Member for Supply and Research, Sir Geoffrey Salmond, has done a great deal during his term of office to improve matters. And a certain amount of weeding-out has been done.

One wise step which has been taken in his administration has been the splitting of the Research Department into two separate departments, one for Technical Development and one for Scientific Research. Altogether Sir Geoffrey Salmond has done a great deal to make our aircraft more fit for ordinary use, and less fit for only heroes to fly in—to paraphrase Mr. Lloyd George's method of speech.

Perhaps Sir Geoffrey has been a little too kindly in his ways and might have achieved even better results by more Prussian methods—one's German readers will doubtless understand what one implies by this use of the word which carries a distinct meaning all over the rest of Germany. It remains to be seen whether his successor, Sir John Higgins, who takes over the duties of Supply and Research next year, will have a heavier hand.

Like Sir Geoffrey Salmond, Sir John is a Gunner officer with the excellent technical training of Woolwich as a basis for his engineering knowledge. Also he is one of the earliest pre-War officers of the R.F.C., and besides being a very good pilot in the past is still a most consistent flyer, so that nobody will be able to complain, as newspaper critics have so often done about the higher ranks of the R.A.F., that the chief of the R.A.F. Technical service is not himself a practical aviator. New brooms proverbially sweep clean, and no doubt Sir John will discover many corners of the Air Ministry which need sweeping. And the cleaner the sweep he makes the better, so long as he does not break himself.

A SUGGESTED IMPROVEMENT.

Purely as a matter of personal opinion one would suggest that an improvement might be made by separating the Department of Supply entirely from the Department of Research, even though it would mean adding another member to the Air Council.

Supply and Research should not be under one chief. They should be two absolutely distinct departments not so much working in co-operation as in opposition, or at any rate in competition. Then, between the technical people in the Supply Department refusing to have anything other than the very best technical equipment, and the Research Department itself being constantly put on its mettle to discover improved equipment, we might make real progress.

The technical people in the Supply Department should be purely critics and not producers, whereas the Research Department should consist entirely of discoverers and not of critics, except in so far as they would discover faults in the products of the Aircraft Industry.

THE TRADE'S PART.

Over and above all that the Aircraft Industry should be both encouraged and criticised. It should be encouraged to produce new and improved aircraft and engines. And its new products should then be mercilessly criticised, and ruthlessly turned down if not up to and surpassing the products of foreign countries. There should be no such thing, as one fears there is at present, as buying a firm's machine merely to keep it in business as a potential source of supply in time of war.

If a firm could produce worth-while designs of its own,

then it should be turned on to produce standard type machines. But machines of its own design should certainly not be bought unless they were away ahead of any foreign products in their own class.

On the other hand, firms which did produce new and improved aeroplanes and engines should receive the greatest possible encouragement.

There is considerable interest in noticing that none of the machines which are now in production, or are issued to R.A.F. units, have actually been produced to R.A.F. specification. One believes one is right in saying that every one of them is what may be called a "private enterprise" design. That is to say, it may have been built to fulfil an Air Ministry requirement, but its design has been almost entirely that of the individual manufacturer and departs quite considerably from Air Ministry specification.

That fact proves two things, firstly that most of the Technical people in the Air Ministry are useless, so that we could very well get rid of them with advantage, and secondly that private enterprise should be encouraged.

The encouragement of private enterprise entails that the number of firms making either aeroplanes or engines should be unlimited. One believes that the Air Ministry has definitely discouraged the production of new aero engines by new firms and has laid down privately the policy that orders will only be given to the four existing aero-engine firms. Undoubtedly each of those four firms has done extremely

good work, but there is always the possibility that a fifth or a sixth or a seventh firm may produce something better—on the principle that there are always better fish in the sea than ever came out of it.

Therefore it is very bad policy in the interests of aeronautical progress for the Air Ministry to say definitely that even if another firm does come along with a particularly brilliant engine, it cannot hope to receive production orders. That is not the kind of policy which enabled the Americans to win the Schneider Trophy from us in 1923 and enabled the Italians to win it this year.

Exactly the same argument applies to the production of new and improved aeroplanes. The Air Ministry should announce quite clearly that if anybody can produce a better aeroplane or a better engine than we have got to-day, and one which at the same time is better than anything which exists in foreign countries, that firm may be assured of orders. Competition is not only good for trade, it is absolutely necessary for the welfare of the R.A.F. and for the adequate defence of this Empire.

Only by encouraging competition, between departments of the Air Ministry and between the firms in the Aircraft Industry, shall we ever reach a stage in which we shall have the best equipped Air Force in the World, the most reliable civil aircraft in the World, and a properly small number of accidents in proportion to the amount of flying which we do.—C. G. C.

AIR WARFARE.

A lecture on "Air Warfare" was delivered at the Imperial College of Science, South Kensington, on Dec. 9, by Air Vice-Marshal H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., R.A.F.

The Chair was taken by Professor L. Bairstow, C.B.E., Zaharoff Professor of Aviation in the University. Introducing the Lecturer, Professor Bairstow gave a brief outline of the history of Aeronautics in this country and said that Air Vice-Marshal Brooke-Popham had been closely identified with British Military Aviation since its earliest days and had been responsible for giving us knowledge of the requirements of the future.

Air Vice-Marshal Brooke-Popham started his lecture by explaining that the chemical apparatus on the bench in front of him was nothing to do with his lecture. He was not going to give a demonstration of gas-bombing.

He said that the scope of his lecture was rather wider than its title implied. He said that the air sense of the Nation was still undeveloped. Man's brain was not yet attuned to thinking in three dimensions and his mechanical genius had outstripped his reasoning power. The Senior Air Officers of the present generation were too old to have any real air sense, because they remembered the days before the existence of the third dimension. This would be remedied when people educated at Cranwell reached the higher positions.

Air Power was the responsibility of the whole Nation and not only of the R.A.F.

The Lecturer then described the performances of modern Service aircraft and pointed out that the records of to-day were the ordinary happenings of to-morrow.

Dealing with Naval co-operation he said that aircraft would be able to drive an enemy fleet out of harbour and they would have to fight or be destroyed. He would not enter into the bomb *versus* battleship controversy then, but he would claim that aircraft would damage and reduce the speed of certain Units of the enemy Fleet thus forcing the main Fleet to abandon the damaged craft or reduce speed as a whole.

Regarding merchant shipping, he showed a map of the Eastern Hemisphere and pointed out the bombing areas possible to various countries and the consequent danger to the great trade routes.

Dealing with Army co-operation Air Vice-Marshal Brooke-Popham said that air attacks could be made on the brain of an Army with great effect. As an example of this he quoted General Sir Edmund Allenby's victory in Palestine on Sept. 19, 1918, when the Turkish Headquarters were bombed from the air and all wires cut by the bombs. The Turkish Command was paralysed before the battle began. Also lines of communication could be destroyed from the air with the consequent failure of all supplies of stores and ammunition.

The Lecturer gave a further illustration of an historical attack on the brains of an Army when a certain King of Syria called for his thirty and two captains and said "Fight neither with small nor great, save only with the King of Israel." (1 Kings, 23-31.) (Students of the Bible will remember that the King of Israel got it in the joints of his harness and the King of Syria won the War).

Concerning direct attack from the air the Lecturer reminded his audience that the object of war was to break the will power of one's opponent. The will of the people was the governing factor of modern war. Consequently air attacks

on enemy towns were calculated to destroy the moral of the inhabitants. Of even more importance were attacks from the air on vital centres such as docks, water supplies, lighting and transport centres.

Defence from the air was a very difficult problem. The defending Squadrons might either be in the air waiting for the enemy, in which case they would be using up their petrol and might have to come down just as the enemy arrived. On the other hand if they were on the ground they would have to get ready and start and reach a good height before the enemy arrived. And warning might be very short. A pilot's clothing weighed 42 lbs. so he could not be expected to live in it. Also it was very hot to wear.

The Lecturer said that he did not wish to harrow the feelings of his audience, but he would like to point out a few facts. During the War 1914-18, invading aeroplanes (not airships) dropped 30 tons of bombs and killed 400 people and wounded 1,400. Enemy aircraft to-day would easily be able to drop three or four times that amount of bombs every twenty-four hours.

Air Vice-Marshal Brooke-Popham said that the Staff College had decided that a landing on an enemy coast was impracticable in view of opposition of enemy aircraft.

Another problem was that of bringing an enemy air force into action. Fighting in the air only took place by accident or by mutual consent. Air fighting was indecisive as illustrated by the battles of the Somme where it had been claimed that the British had secured the "Command of the Air"—a claim which was never made by the Service itself. The Somme was followed by the battle of Arras when the British were definitely not in "Command of the Air."

The chief virtue of an air force was its mobility. An air squadron could be moved from place to place whereas a 15-inch gun was immobile. Also an air force needed no lines of communication. Mobility applied not only to movement but to mode of use.

Illustrations of the economical use of aircraft in small wars both from the point of view of lives and money had been shown in the recent air operations in Kurdistan and Waziristan. The action in the latter country had cost £76,000 and the total casualties were R.A.F. two killed and enemy 11 killed and wounded. An economical and humane method of war.

The Lecturer emphasised the importance of the development and upkeep of Empire air routes. He said that air routes were to the British Empire what Roman roads had been to the Roman Empire. The routes had been blazed. Now they must be kept open.

The Air Vice-Marshal spoke of the difficulties that had to be faced by the pilots in the Royal Air Force. He tried to make his audience understand the problems confronting the pilot of a single-seat fighter who had to look after his engine, aeroplane, oxygen apparatus, electric heater, radio-telegraphy and a pair of machine guns. He did not claim that the pilots of the R.A.F. were in any way super-men. But a man who had a job like that to do was undoubtedly different and if this difference made itself manifest in other ways he hoped that his audience would remember it and "be to his faults a little blind."

In conclusion the Lecturer said that the air sense of the Nation must be developed. Unless we were ready for an attack we were encouraging attack from a more ambitious nation.—C. M. MCA.

THE FAIREY-REED AIRSCREW.

Now that the metal airscrew has been so much before the public eye on account of its association with so many of the prominent achievements of the aircraft of to-day, perhaps a brief review of the causes leading to its more general adoption may be of interest.

The disabilities of the airscrew previous to the development of the metal airscrew were many. Its general frailty under adverse weather conditions, its failure in the tropics, its lack of strength to withstand the increased performances called for by engines and aircraft; these deficiencies together with many others all impelled research for an airscrew of sufficient durability and strength to fulfil the new conditions and yet to produce a degree of efficiency as great, if not greater than that of the other pattern.

The metal airscrew seemed to be the solution, but the question was how to utilise this material so that full advantage of its superior qualities could be taken. Cumbersome attachment fittings for the blades, together with their mechanical difficulties and risk of failure with this type of arrangement undoubtedly was to be avoided. The complete solution has appeared in the form of the Reed Airscrew.

Briefly the principal causes of the high degree of efficiency and serviceability attained by the Fairey-Reed Airscrew are as follows:—

1. It has thin solid blades of a homogenous and elastic high tensile material such as duralumin, or other suitable light alloy, which are maintained, when in use, in a condition of complete equilibrium through the centrifugal and air forces acting on them.

2. Owing to the properties of the material from which these airscrews are made, highly efficient sections throughout the blade can be employed and still provide the requisite factor of safety in the strength of the airscrew. This point is of great importance, particularly where high peripheral speeds are obtained, and is one of the reasons why the Reed Airscrew is now universally adopted for high speed aircraft.

There are two types of Fairey-Reed Patent Airscrews, known as the "D" and "R" types. The "D" type Fairey-Reed Airscrew is in more general use and is made from a single strip of duralumin or other suitable material shaped and profiled to the required section. The desired angles throughout each blade are then obtained by twisting the blade from the boss outwards in the special bending machine. As the original engine airscrew hub is utilised with the "D" type airscrew it is necessary to make up the boss to the dimensions of the wooden airscrew for which the engine hub has in most cases been designed. For this purpose shaped laminated oak or metal filler blocks are attached to each side of the duralumin blank boss by means of countersunk bolts.

The construction of both blades from one continuous piece of material is a very important factor in the success of these airscrews. It has been found that the joints of built-up metal airscrews, owing to the varying stresses experienced in use, are prone to cause vibration and wear. A defect which, of course, cannot occur to the Fairey-Reed Airscrew.

The "R" type Fairey-Reed Airscrew is made from a single solid forging of duralumin, but, unlike the "D" type, does not employ filler blocks as its boss is forged integrally with the blades. The desired blade angles are still obtained with the bending machine. With this type, however, the usual engine hub is dispensed with and a special hub, which effects a considerable saving of weight, is in all cases supplied. With the exception of the advantage which this modified form of hub gives, the general characteristics of performance and reliability are identical to those of the "D" type.

In spite of the thinness of the blade sections of the Fairey-Reed Airscrew, the stress under working conditions never

exceeds approximately 25 per cent. of the elastic limit of the material, and is of course a still smaller percentage of the ultimate tensile strength of the material. Even in the event of vibration, produced either by irregular running of the engine, defective engine mounting, or possibly by a damaged airscrew, there is no possibility of danger due to fatigue owing to the very low percentage of the normal stressing of the material compared with its ultimate strength.

During a recent test a Reed Airscrew was perforated by gun-fire and it was found on the completion of the test that the cross sectional area had been reduced to less than 30 per cent. of the original before failure occurred. These tests were carried out at full power at normal r.p.m. Various other tests have also been carried out in America, France and England to ascertain if permanent deflection of the blades can be obtained. The result of these tests has shown that although airscrews have been run with overloads varying from 50 to 100 per cent. for periods up to 30 hours without stopping, no permanent deflection of the blades has been recorded.

In addition to the obvious advantages of the Fairey-Reed Airscrew, a considerable increase in performance has frequently occurred when aircraft have had other types of airscrews replaced by the Fairey-Reed. This is sometimes in top speed, sometimes in climb, and in many cases in both. The theoretical reasons for the increase in efficiency have thus been confirmed in actual practice on numerous occasions.

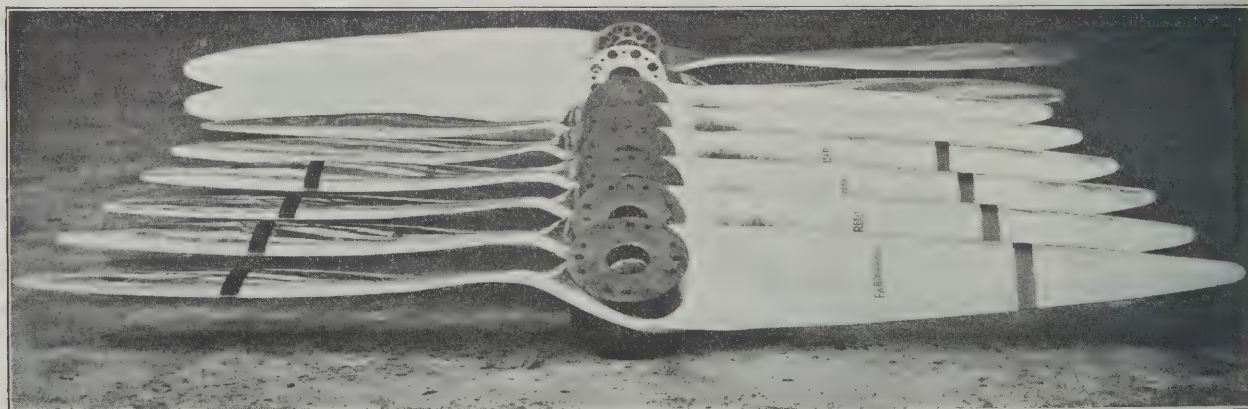
Should it be desired to alter the characteristics after test so as to increase or decrease the revolutions per minute of the engine the Fairey-Reed Airscrew can be reset at the works as often as desired. For example, should an engine be found to run roughly at the number of revolutions originally found to correspond to the normal cruising speed of the aircraft, this can be altered by resetting the airscrew so that the same air speed is attained for a higher or lower number of revolutions, where a smoother running of the engine can be obtained. Alternately, an airscrew can be reset so as to give optimum results either under summer or winter conditions. For instance, it can be made to absorb more power from the engine through giving an increase in the number of revolutions per minute when taking off under conditions of low air density such as may be experienced during summer conditions or when operating from aerodromes at considerable altitudes above sea-level.

It has been found in crashes that, as a rule, a Fairey-Reed Airscrew folds back under the engine and so forms a skid, thereby saving a considerable amount of damage that would otherwise occur had the machine not been prevented from turning over on its nose.

Airscrews concerned in such crashes have been repaired by us and returned to their owners, who report that they are giving the same excellent results as when originally delivered. In nearly every event of damage to a Fairey-Reed Airscrew it is possible to restore it to its original condition.

As an indication of the life of these airscrews when working under such climatic conditions as would necessitate their frequent renewal had they been of the wooden pattern, it is interesting to record the fact that there are over 300 Reed Airscrews flying to-day which have been in use for over three years.

Among the many recent events in which the Reed Airscrew has taken a prominent part may be mentioned Commander Byrd's flight to the North Pole, the winning of the 1926 King's Cup and also the S.M.M.T. Prize at Lympne. This year's Schneider Trophy as well as the two previous contests for this trophy have been won by aircraft fitted with these airscrews.

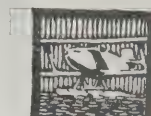


A batch of Fairey-Reed Airscrews awaiting delivery.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



CAIRO · CAPETOWN · CAIRO · ENGLAND.



FAIREY AIRCRAFT.

The following extracts from the official Report of the R.A.F. Cape Flight (A.M. Communique No. 1401) indicate the reliability and efficiency of the Fairey III.D Aircraft used in this outstanding achievement:—

"The whole flight was completed without incident, according to programme and without any change of engines."

"Had there been any mishaps there might have been something to write about, but as it happened, from start to finish everything ran perfectly."

"The reliability of the engines and aeroplanes was no doubt a great factor in determining whether the Flight kept to time table or not."

"Although most of the country flown over between KOSTI and PRETORIA was bad for a forced landing, the pilots had such faith in their engines and aeroplanes that the idea of a forced landing seldom if ever crossed their minds."

"It should clearly prove to the world in general the reliability and efficiency of British aircraft."

THE FAIREY AVIATION COMPANY, LIMITED,



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE TENTH FRENCH AERO SHOW.—II.

THE ENGINE EXHIBITS.

ARMSTRONG-SIDDELEY MOTORS.

Armstrong-Siddeley Motors Ltd. exhibit the complete range of their engine types, including the new Mongoose engine which has not previously been seen in public. All these engines are of the radial air-cooled type, and have many features in common. It is therefore proposed to give a general description of the common features, and thereafter to indicate the qualities peculiar to the individual engines.

The fact that the engines arrived in time for the opening of the Show is a credit to Mr. Stewart Proctor and Mr. Bennett Baggs and their two *aides* from the Armstrong-Siddeley Co. On the Thursday evening before the Friday opening day, the engines were, thanks to stupid shipping, at the bottom of a ship in the Seine with a whole cargo of barrels on top of them. By a combination of tact, firmness and largesse, Mr. Proctor managed to get the whole ship unloaded and the engines excavated.

Working all night, the four Englishmen had their engines in place, all beautifully polished up, and their stand smart and ship-shape, in good time for the official opening next morning. Really, the British Aircraft Industry owes them a debt of gratitude for saving our face in front of all European Aviation.

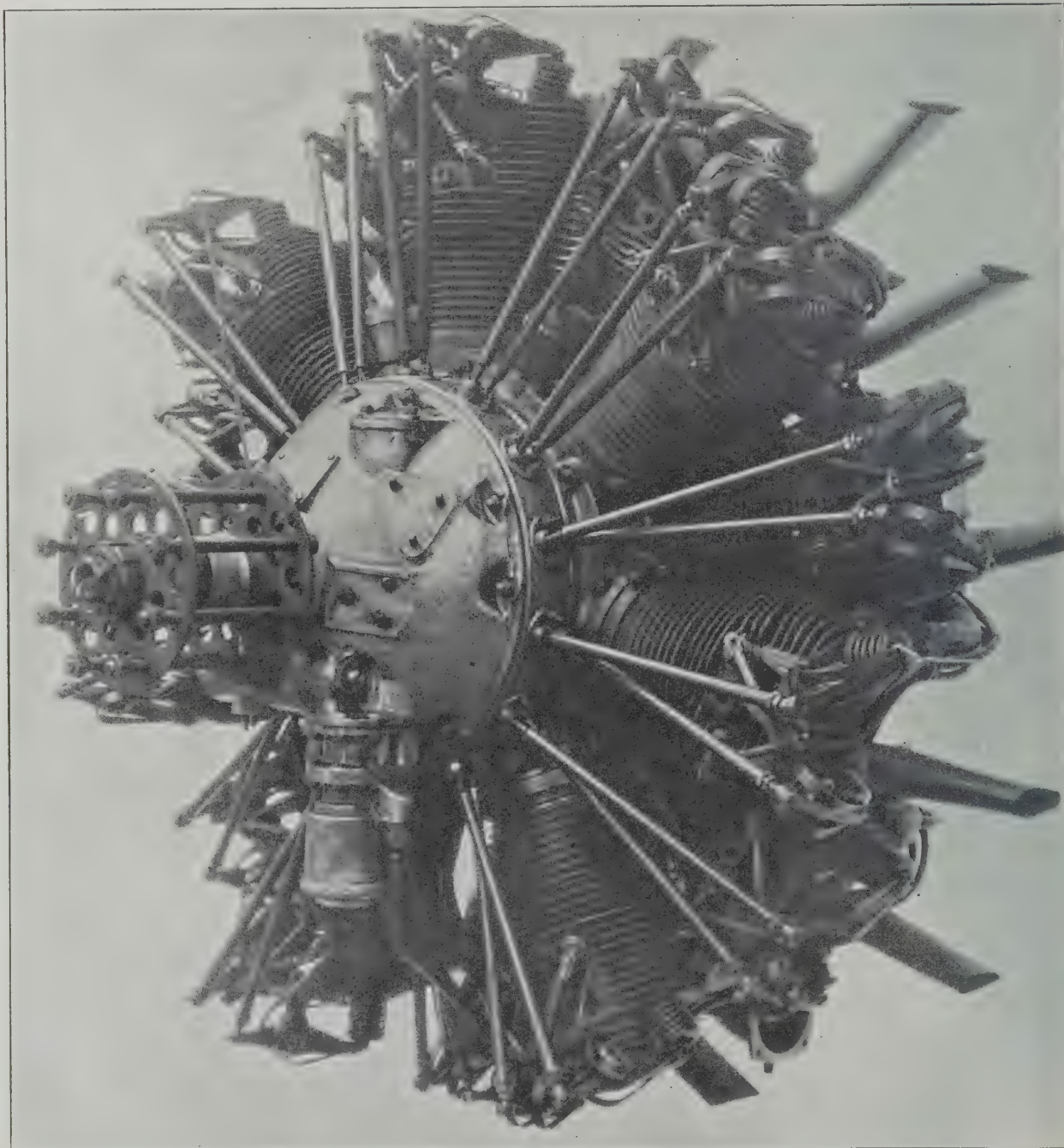
It was bad enough to have the Ajax stand empty on the opening day, because of the same stupid shipping. Two British stands empty out of three would have been a tragedy. Happily the Ajax was rescued from the French railway on the Monday, and by another fine piece of all-night work the Proctor-Baggs team had the machine installed resplendant by Tuesday morning.

And so to the description of the engines.

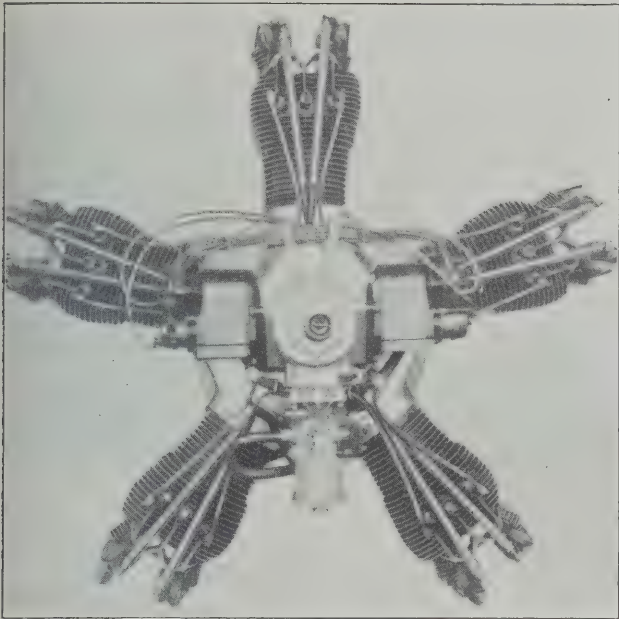
The cylinders of all Armstrong-Siddeley engines are of compound construction, with steel barrels, machined from the solid, screwed into aluminium heads and locked by a ring-nut which appears externally as a radiating fin. The cylinder bases are screwed into steel adapters pinned into the crankcase, and are locked into position by a split clamping ring.

Crankcases, of aluminium alloy, are open-ended castings carrying the cylinders in spigots, the tappet guides and a flange for the engine bearer. The crankcase rear cover carries the crankshaft rear bearing and has cast in it a short cylindrical induction chamber containing a fan. The front cover carries the crankshaft front journal bearing and the thrust bearing, and also the cam, gas starter and oil-pump drives.

The crankshaft is made in one piece, and counterbalanced by bronze balance weights, and is supported in roller bearings. A double-acting ball thrust race is also fitted.



A WORTHY REPRESENTATIVE OF BRITISH DESIGN.—The Armstrong-Siddeley Jaguar, 385/400 h.p.



Armstrong-Siddeley Mongoose, 120 h.p.

Connecting rods consist of a combination of one master rod for each row of cylinders and a set of articulated auxiliary rods. The big ends have plain bearings, and the articulating and gudgeon pins are all of the floating type.

Pistons are "Y" alloy forgings each with two gas rings and scraper rings which number two in the Jaguar and Lynx and one in the Mongoose and Genet.

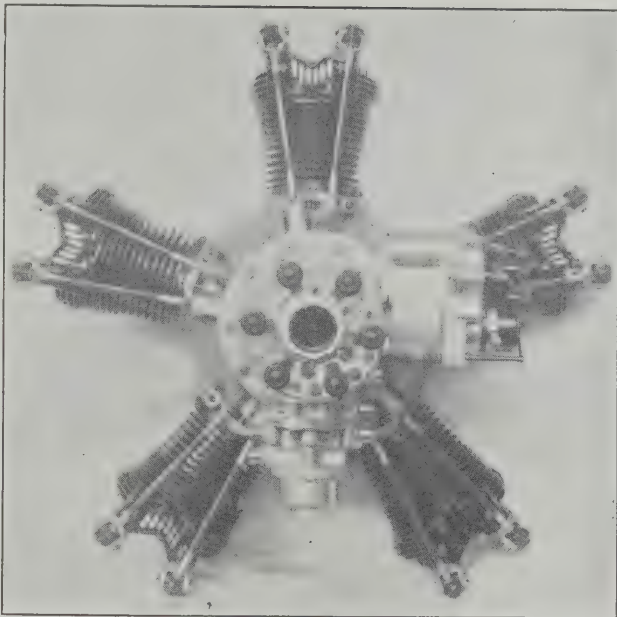
Two valves are fitted to each cylinder head. These close on bronze seats pressed into the head castings when the heads are hot. The valves are operated by push rods and rockers from a cam-pack concentric with the crankshaft and driven therefrom by an epicyclic train of gears.

The carburettor is attached to the rear crankcase cover, and the gas passes through a passage jacketed by warm oil into the centre of the chamber already mentioned in the crankcase rear cover. Here it encounters a centrifugal fan driven directly from the after end of the crankshaft, and is thus thoroughly stirred up and delivered through a set of tangential distributor pipes to the induction valves.

The Jaguar (385-400 h.p.).

In this engine there are two staggered rows, each of seven cylinders 5 inches (127 m/m) bore by 5½ inches (140 m/m.) stroke, driving a two-throw crankshaft. Two fourteen-cylinder magnetos are carried from the rear crankcase cover. The Jaguar is provided with a pressed steel conical mounting which bolts to a flange on the crankcase, and to an appropriate bulkhead on the fuselage of the aeroplane.

The compression ratio is 5/1, the normal output is 385 b.h.p. at 1,700 r.p.m., and the maximum 425 b.h.p. at 1,900 r.p.m. The weight complete is 770 lbs. (348 kg.), the fuel consump-



Armstrong-Siddeley Genet, 60 h.p.

tion .56 pints (.31 litres) per h.p. hour. Overall diameter of the engine is 44 inches (1.14 m.).

The Lynx (200 h.p.).

This has one row of seven cylinders 5 inches (127 m/m.) bore by 5½ inches (140 m/m.) stroke driving a single-throw crank. The engine is thus half a Jaguar, has the same arrangement of magnetos (seven-cylinder type, naturally) and mounting cone as employed in the Jaguar.

The compression ratio is 5/1, the normal output is 200 h.p. at 1,620 r.p.m., and the total weight 480 lbs. (218 kg.). The over-all diameter is the same as that of the Jaguar.

The Mongoose (125 h.p.).

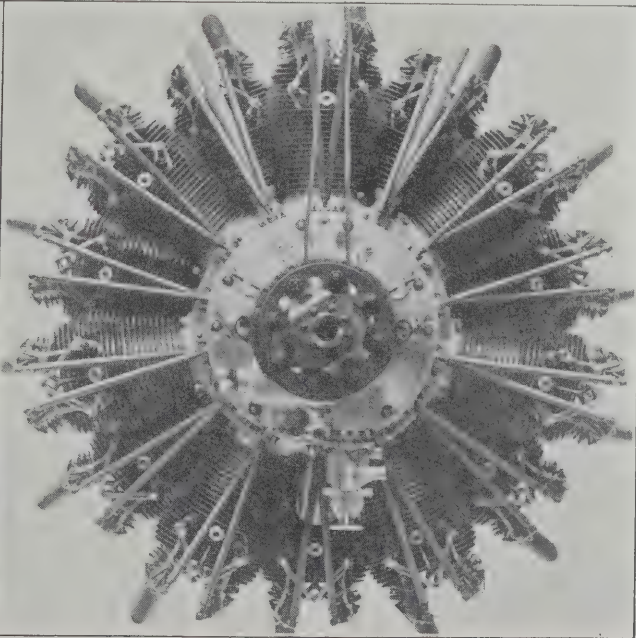
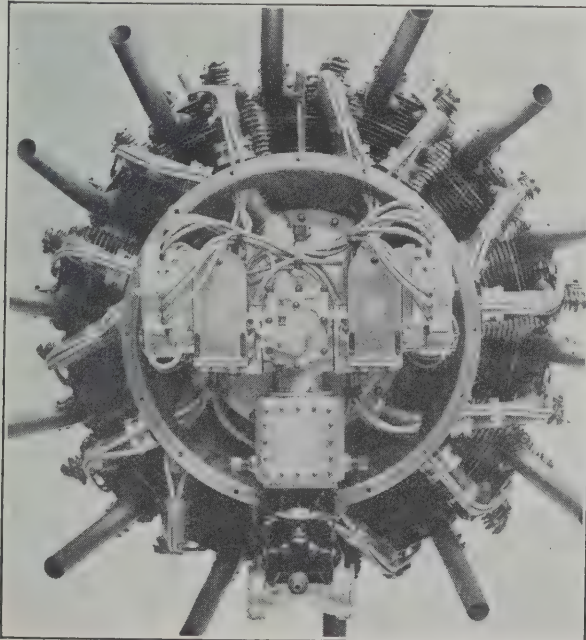
This is a five-cylinder engine with cylinders of the same size as those of the Jaguar and Lynx—that is 5 inches (127 m/m.) by 5½ inches (140 m/m.). The general disposition and detailed design follows that of the larger engines with one or two exceptions.

The most striking is that the magnetos are at the front instead of the back of the engine. A somewhat lighter type of piston is used, with only one instead of two scraper rings.

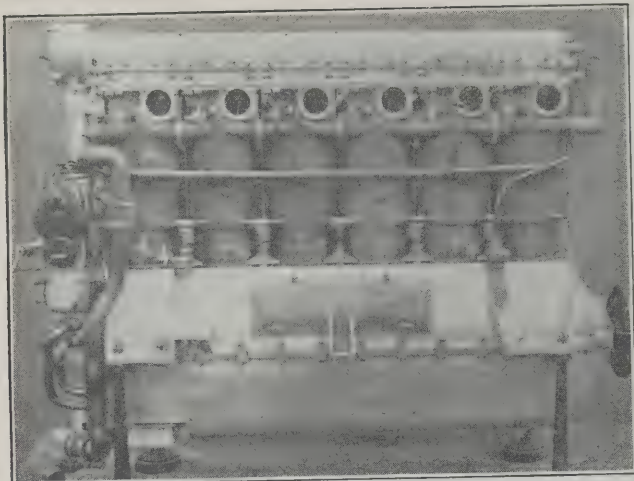
The compression ratio is again 5/1, the normal output 125 b.h.p. at 1,620 r.p.m., at which output seven gallons of fuel are used per hour together with 2½ pints of oil. The over-all diameter is approximately the same as that of the Lynx.

The Genet (60 h.p.).

This engine was produced primarily to meet the conditions of *The Daily Mail* Light Aeroplane Competitions of 1926, but with the intention of providing not merely a competition en-



Back and front views of the Armstrong-Siddeley Jaguar.



Breitfeld and Danek Perun II, 240 h.p.

gine but a really useful engine for the private touring aeroplane. In general and in detail design it is very like all the other Armstrong-Siddeley engines.

There are five radially arranged cylinders of 4 in. (102 m/m.) bore and stroke, working at a compression ratio of 5.2/1. As with the Mongoose, magnetos are carried at the front of the engine—where they are most readily accessible. In other respects the description already given is applicable.

The normal output is 65 h.p. at 1,850 r.p.m., the maximum is 75 b.h.p. The total weight is 168 lbs. (76 kg.) and the fuel and oil consumption .575 pints (.33 litres) and .03 pints (.017 litres) per h.p. hour.

BREITFELD DANEK AND CO.

This firm—which has built aero-engines at Prague since 1915—exhibit two water-cooled engines—one a straight six, known as Perun II, and the other a 12-cylinder Vee type, known by the initials B.D.

Both engines are of the super-compressed type intended for work at high altitudes, and have cylinders of the same dimensions.

The Perun II (240 h.p.).

This has six vertical cylinders, each with a separate welded-on sheet steel jacket, tied together at the head by a cast aluminium camshaft casing. Each cylinder has two valves only, and is clamped into the crankcase by dogs between successive cylinders bearing on flanges on the barrel.

Magnetos, oil pumps and water pumps are carried at the rear end of the crankcase.

A carburettor with a single-float chamber and three separate chokes is fitted. All three supply gas to a common inlet manifold, and are presumably arranged similarly to the B.M.W. high-altitude carburettor.

In this the central choke supplies a somewhat over-rich mixture, and the other two a decidedly weak mixture. The throttles are so interconnected that the one controlling the central choke opens first, and is nearly wide open before the other two come into play.

For operation at low altitudes the central choke and jet supplies the greater proportion of the gas, and the engine runs partially throttled on a rich mixture without fear of detonation occurring. As height is gained further movement of the throttle control opens the two weak mixture throttles, and the engine is supplied with an increasing volume of increasingly weakened mixture.

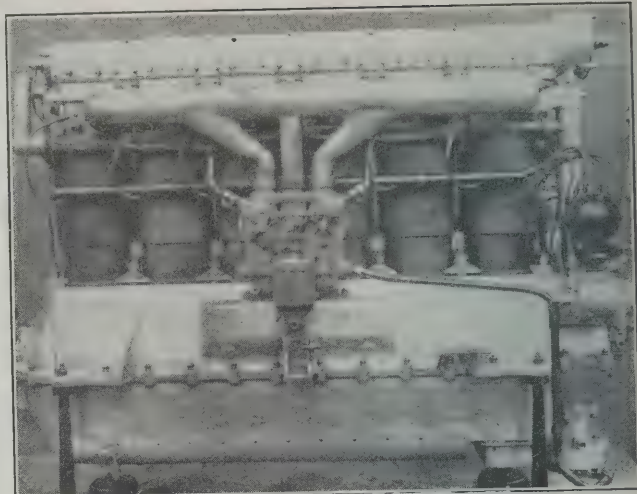
The combination of this type of carburettor together with the use of a high-compression ratio makes it possible to maintain normal full output up to about 10,000 feet and to secure remarkably low fuel consumption.

The Perun II has a bore and stroke of 160 and 190 m/m., a compression ratio of over 6/1, and normally develops 240 h.p. at 1,400 r.p.m. For very short periods this output may be very considerably exceeded by opening the throttles beyond their normal ground-level position, but the engine is not intended to stand continued operation in these conditions. The weight dry is 315 kg. (694 lbs.) and a fuel consumption of 190 grammes (0.42 lbs.) per h.p. hour is claimed.

The B.D. (450 h.p.).

This is a twelve-cylinder, 60° Vee, with separate steel cylinders and water jackets, having four valves per cylinder. Each line of cylinder blocks is united at the head by a cast aluminium camshaft casing, which completely encloses the overhead valve gear.

Magnetos, oil pumps and water pumps are at the rear end of the crankshaft, and carburettors are fitted between cylinders. They appear to differ in form and arrangement from the carburettor fitted to the Perun II, but apparently work on the same principle, and the engine has the same high-altitude characteristics.



Breitfeld and Danek Perun II, 240 h.p.

THE BRISTOL AEROPLANE CO. LTD.

The Jupiter VI.

Although the Bristol stand is actually in a somewhat obscure corner of the Grand Palais, the Jupiter engine is one of the dominant notes of the whole show. There are certainly more Jupiter engines than any other mark to be found in aircraft in Paris, and that is, one believes, true generally of French service aircraft as a whole.

On the basis of its merits, the Jupiter is now being built not only in the country of its origin, but also in France, Italy, Czecho-Slovakia and Japan, but the engines so far produced in these countries have been of the Series IV type, and the Jupiter Series VI shown by the Bristol Co. naturally attracted very much attention as a still further development of the type already so largely used in France.

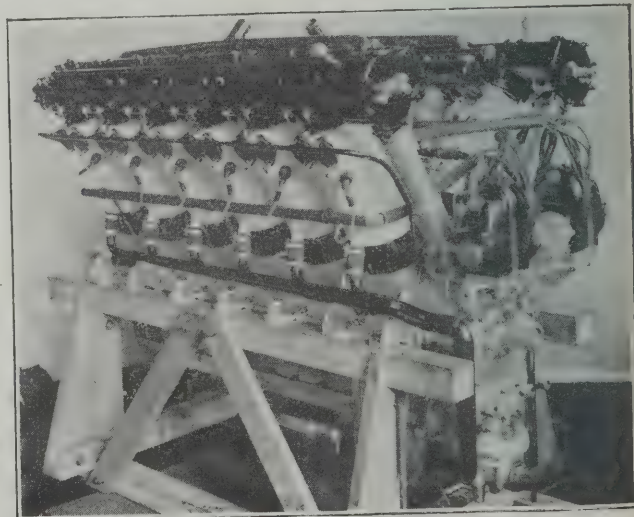
The Jupiter VI is a nine-cylinder, air-cooled radial engine nominally of 450 h.p. actually built in three different models. The first is the high-altitude type with a 6.3 compression ratio, which cannot be opened out to full throttle at less than 5,000 ft. (1,500 m.). This engine develops 425 h.p. at 1,700 r.p.m. and 465 h.p. at 1,870 r.p.m. up to an altitude of 5,000 ft., using standard aviation petrol plus 20 per cent. of benzol. With further added benzol, or by the use of "ethyl gas," a very considerable increase in power at sea level may be obtained for racing or similar purposes.

The second type—the standard military type—has a compression ratio of 5.3/1. It develops 450 h.p. at 1,700 r.p.m. and 485 h.p. at 1,870 r.p.m.

The third type is the commercial type with a compression ratio of 5/1, giving 420 h.p. at 1,700 r.p.m. and 460 h.p. at 1,800 r.p.m.

The Jupiter has a crankcase split in the plane of the cylinders and bolted together by bolts passing between each pair of cylinders. This crankcase is made from duralumin forging and is machined all over.

The crankshaft is built up from two nickel-chrome steel forgings. The crankpin, front crank web, and the airscrew shaft are in one piece. The other piece comprises the rear crank web and the rear journal and is actually only a steady for the main front part of the shaft, as it transmits no torque except that necessary to drive the auxiliary gears at the back of the engine.



Breitfeld and Danek B.D., 450 h.p.

The end of the crankpin is provided with a tapered key, machined out of the solid, and enters the web of the tail piece. The key mates with a carefully-fitted keyway in the tail piece, which is split and clamped up on the pin by a stout bolt.

Owing to this crankshaft construction the big end and its bushes can be made solid, and slipped on to the crankpin before the tail end of the crankshaft is attached to the crankpin.

The master connecting rod and the big end are machined in one piece from a forging. The big end bore is fitted with a pressed-in hardened steel bush, and this runs on a floating sleeve of bronze, which is lined with white metal and runs on the crankpin. This construction secures a very strong and rigid big end and also allows the articulation of the auxiliary rods to be kept very close indeed to the crank centre.

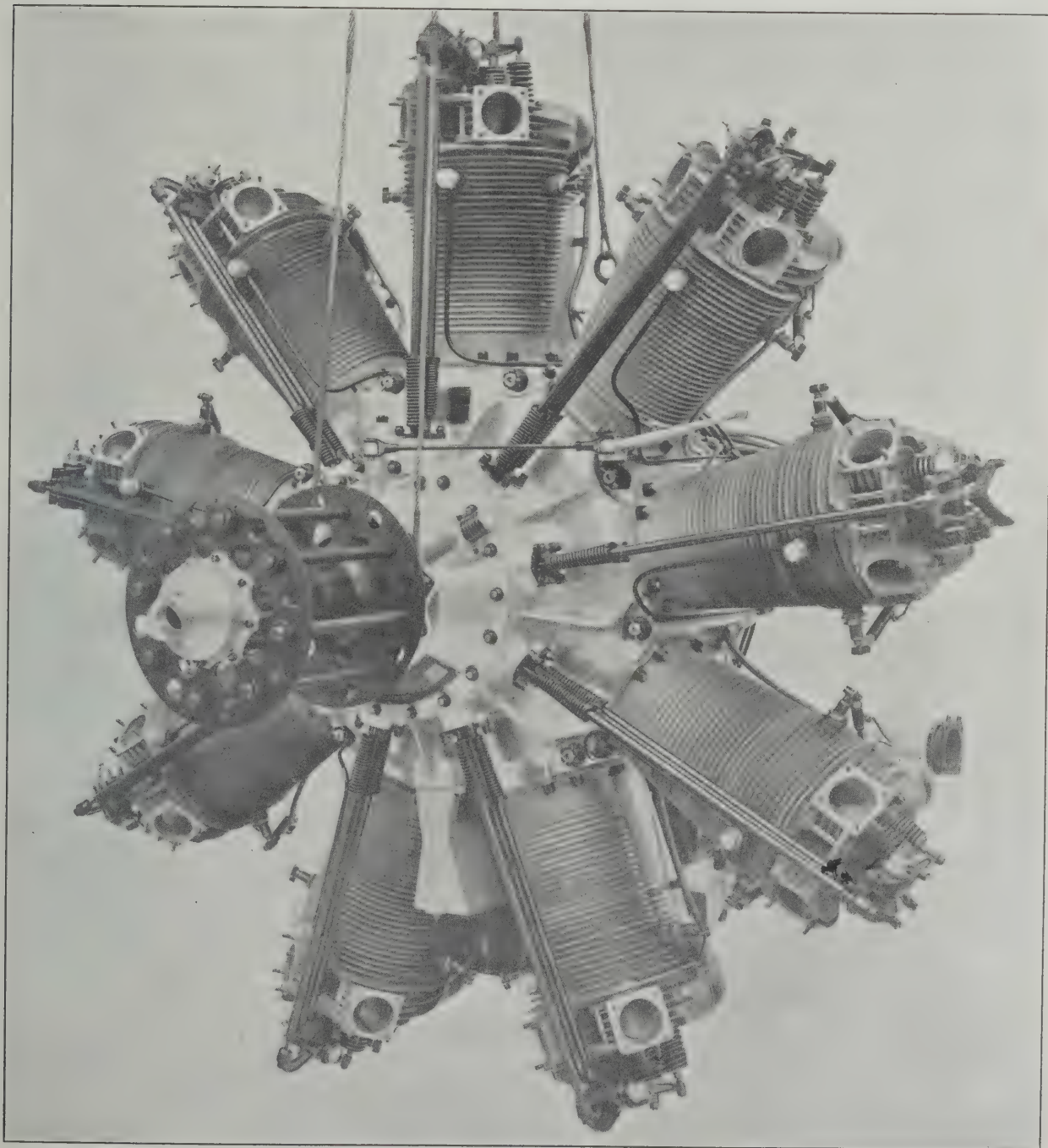
Cylinders are of steel machined from a forging and have closed heads in which the valve seats are formed. To these aluminium alloy castings in which are formed the valve ports are very carefully fitted. There are four valves per cylinder.

Valves are push-rod operated from a cam-pack, concentric with the crankshaft and driven therefrom by epicyclic gearing. This pack is contained in the front of the front half

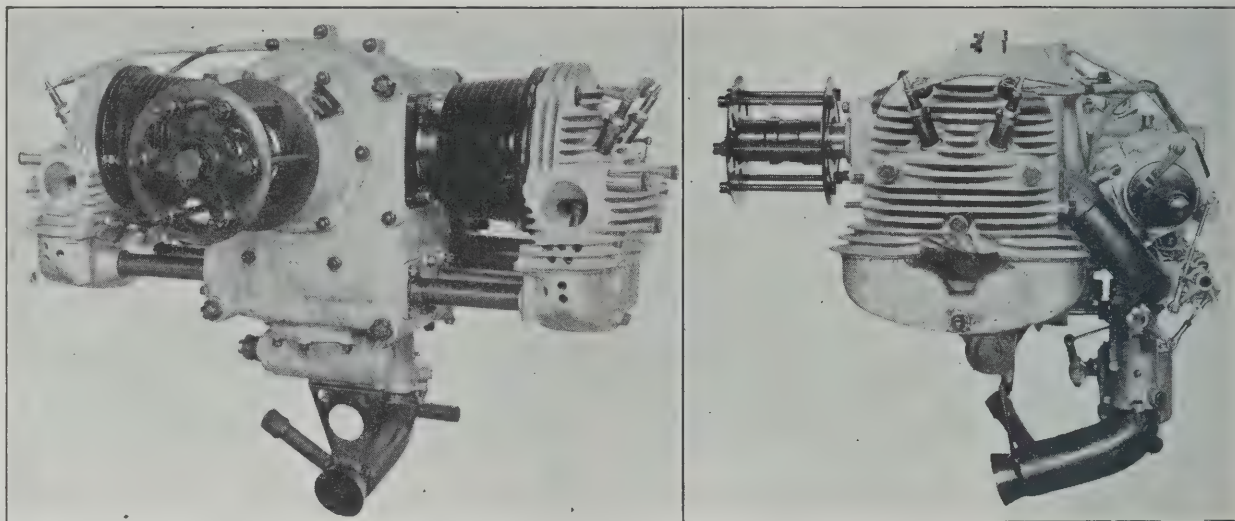
of the crankcase. The valve rocker-arm brackets are hinged on the cylinder head at their inner end, and supported at the outer end by the rods running down to the crankcase. As the engine warms up, the cylinders expand—which normally would increase the valve tappet clearance. As, however, the rocker bracket tie-rods do not heat up as much as the cylinders, the whole rocker mechanism is tilted as a result of cylinder expansion in such a way as to maintain clearances practically constant.

Magnetos, oil pumps, gas-starter distributor, rev.-counter drive and gun-synchronising gears are driven from the rear end of the crankshaft, and all these accessories and their drives are compactly and accessibly arranged on the rear end of the crankcase.

A special feature of the Jupiter engine is the induction system. In the rear half of the crankcase there is an annular chamber into which is inserted an aluminium alloy ring whose section is everywhere a three-legged star. This divides the aforesaid annular space into three channels. This ring is twisted, so that each of the three channels revolve three revolutions in the circumference of the ring. Nine equally-spaced induction pipes are led out of the annular chamber and it will be seen therefore that each channel in the twisted



THE PREDOMINANT AIR-COOLED RADIAL.—The Bristol Jupiter Series VI, 450 h.p. Including Jupiters made under licence in France, Italy, Czecho-Slovakia and Japan, there must be more Jupiters in service than any other single design.



AN UNOFFICIAL RECORD.—The Bristol Cherub III, which has taken first prize at every light aeroplane meeting in which it has competed.

ring mates with three equally-spaced induction pipes, and the whole arrangement really forms a set of three induction manifolds each serving three cylinders.

A Triplex Bristol Carburettor having three chokes and sets of jets is attached to the rear corner of the engine and each choke communicates with one of the three induction channels.

The Jupiter VI has cylinders of $5\frac{1}{4}$ inch (146 m/m.) bore, and $7\frac{1}{2}$ inch (190 m/m.) stroke. The compression ratio and output vary according to type as already described. The weight of the complete engine including carburettor and air intake pipes, magnetos, plugs, airscrew hub and bolts, gun-synchronising gear and claw for Hucks starter is 730 lbs. (310 kg.).

The Bristol Lucifer Series IV.

A three-cylinder air-cooled radial engine nominally of 120 h.p. specially suitable for training and touring machines. The cylinders are of the same bore ($5\frac{1}{4}$ inches, 146 m/m.) as those of the Jupiter, but have a stroke of only $6\frac{1}{4}$ inches (159 m/m.).

The general design of the cylinders is similar to that used on the Jupiter—steel barrels with a flat head containing the valve seats with a carefully-fitted aluminium head casting containing valve ports and cooling fins. Four valves per cylinder are fitted.

The crankcase is an aluminium casting of barrel form with a circular mounting flange at the after end.

The crankshaft is in one piece, and is carried on roller bearings; it is fitted with a split big end attached to the

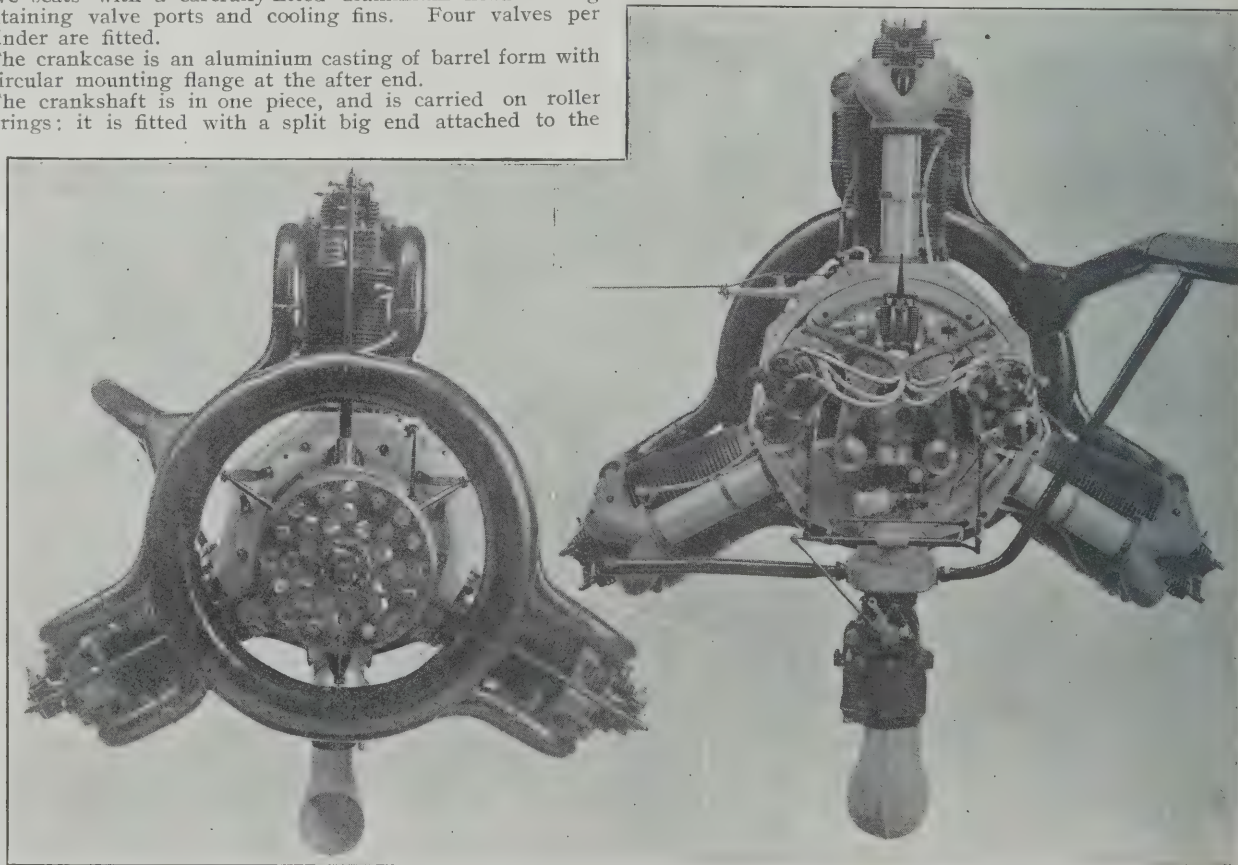
master connecting rod, and with two auxiliary rods articulated to it.

The valve gear is generally similar to that of the Jupiter. A cam-pack, concentric with the crankshaft and driven epicyclicly, is carried in the front cover of the crankcase. Valves are push-rod operated through rocker arms and the same type of compensating gear as is used on the Jupiter maintains constant tappet clearance.

The Lucifer is fitted with a geared starting handle and a decompressor which renders starting safe and certain.

Long experience with the Lucifer at the Bristol Flying School and elsewhere has demonstrated that this engine is almost unbelievably reliable, is exceedingly economical in service and requires a minimum of maintenance. The engine regularly runs from 200 to 250 hours between overhauls, and replacements are rarely necessary.

The Lucifer develops 130 h.p. at 1,700 r.p.m., with a maximum of 140 h.p. at 1,870 r.p.m. At normal output the fuel and oil consumption is .54 pints (.3 litres) of petrol, and .033 pints (.018 litres) of fuel per h.p. hour. The weight complete with hand starter, decompressor, and airscrew hub is 330 lbs. (150 kg.).



The Bristol Lucifer Series IV, 120 h.p.

The Bristol Cherub Series III.

There is pretty certainly no other aero-engine in existence which can lay claim to so consistent a series of successes as the Bristol Cherub. It has taken part in the majority of the competitions for light aeroplanes organised in Britain, Germany and the United States, since 1924, and machines equipped with the Cherub have taken premier awards at every competition in which they have been entered.

The Cherub III is of the two-cylinder horizontally-opposed air-cooled type, with a bore and stroke of 90 m/m. x 96 m/m., with a compression ratio of 5.5/1, developing normally 32 b.h.p. at 2,900 r.p.m., with a maximum output of 36 b.h.p. at 3,200 r.p.m. The weight complete is 100 lbs (45 kg.), and at normal r.p.m., 2 gallons (9.0 litres) of fuel and 1 pint (.55 litres) of oil are consumed.

The cylinders have steel barrels, with aluminium alloy heads bolted on. Two valves are set in each head, arranged radially to the cylinder bore, and bed on alloy steel seats screwed into the head.

The valves gear of the Cherub is somewhat unusual. The camshaft, driven by plain spur-gears, runs across the crankcase, below, and parallel to, the crankshaft. The cams operate, through fingers, rocker arms on the inner ends of shafts which run parallel to the cylinder axis out to the cylinder heads, and cause partial rotation of these shafts. Further rocker arms at the outer end of these shafts operate the valves directly. Expansion of the cylinders may move the valve tappets along the face of the operating rocker, but does not change the clearance.

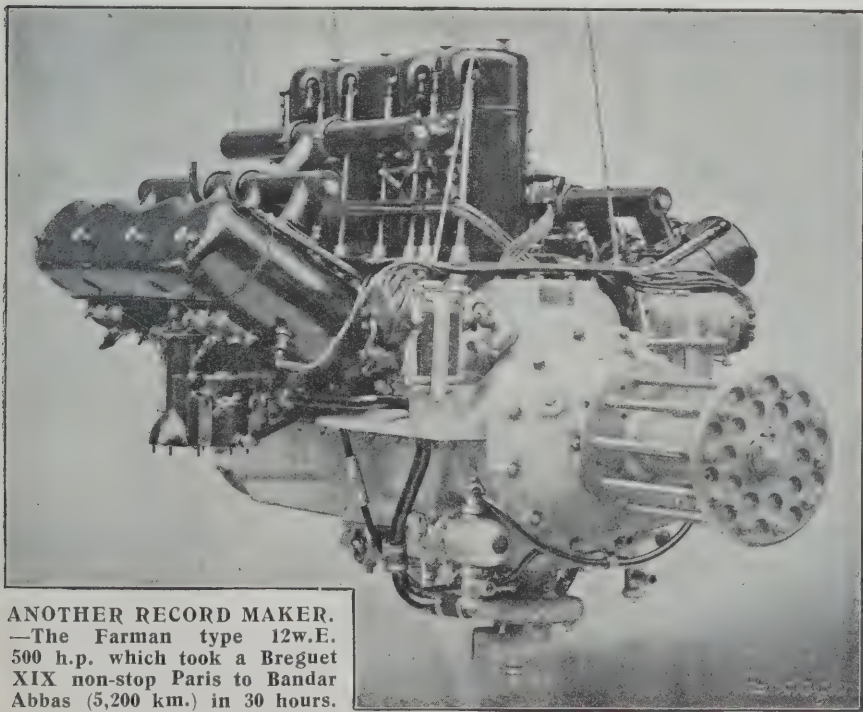
Dry-sump lubrication is provided by two gear-type oil pumps, and a double pole magneto fitted with an impulse starter fires two plugs per cylinder. A special type of Zenith carburettor provides mixture.

CAFFORT.

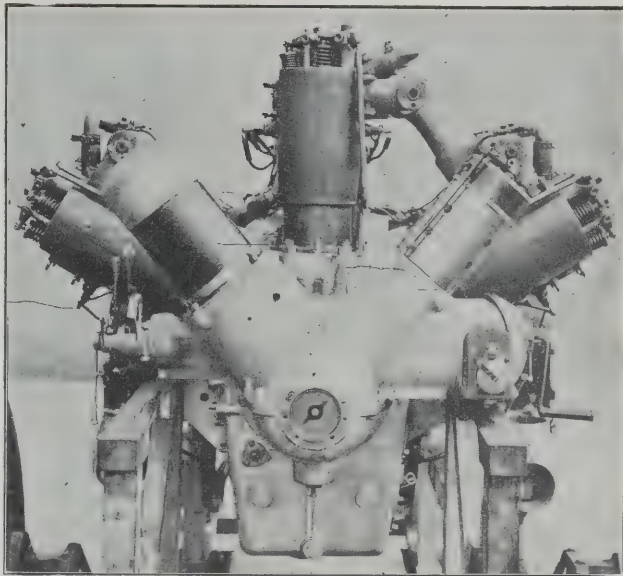
This firm exhibits an engine of a novel type. It is a twelve-cylinder, horizontally-opposed water-cooled engine of large size and power. The idea underlying this design is that such an engine could be entirely buried within a thick wing in a large two-engine machine, or, alternatively, have the two-cylinder blocks faired into the wing roots of a single-engined monoplane. Assuming that the thick-winged monoplane is a type to be developed seriously—as one believes it to be—the horizontally-opposed engine undoubtedly has its points. There seems to be no serious difficulty to overcome, though probably the weight will be somewhat greater than with the more usual Vee type.

The Caffort engine is really a pair of straight sixes put base to base and turned horizontal. The crankshaft is of the normal six-throw type with pins spaced 120° apart, built up in three pieces. Crank webs are unusual in that each has a deep semi-circular channel milled in each side, so that the section of the web is an H.

Connecting rods on one cylinder block are of the normal type with split big-ends. On the other block the big ends are bifurcated and embrace the big ends of the opposite block.



ANOTHER RECORD MAKER.
—The Farman type 12w.E. 500 h.p. which took a Breguet XIX non-stop Paris to Bandar Abbas (5,200 km.) in 30 hours.



End view of the Farman 18w.D. engine of 700 h.p.

Four valves per cylinder are fitted. These are operated by two overhead camshafts—one for inlet and one for exhaust valves—to each block.

The crankcase is a single box section casting. The main crankshaft bearings are carried in split bridges, the lower halves of the bridges integral with the crankcase and the upper halves bolted into place. A large rectangular cover on the top of the crankcase gives access to the interior.

The sample exhibited is the first of the type yet produced, and has so far only been subjected to preliminary test. It is expected that the output of 510 h.p. so far achieved will be considerably increased, and that in future models a considerable reduction of weight will be secured.

The Caffort engine has cylinders 145 m/m. and 150 m/m., a compression of 5.3/1 and develops 500 h.p. at 2,000 r.p.m. of the crankshaft for a dry weight of 600 kg. (1,320 lbs.). It is fitted with a reduction gear to the airscrew having a ratio of 1.88/1.

FARMAN.

The two broad-arrow type Farman engines—one a twelve-cylinder of 500 h.p. and the other an 18-cylinder, 700 h.p.—are shown. These are practically unaltered from the engines shown at the last Salon, but whereas previously both engines were relatively untried, to-day the 500 h.p. type at least has proved itself a thoroughly reliable heavy-duty engine, which has to its credit the making of 14 World's records in one year—including a non-stop flight of 5,200 km. (3,200 miles) from Paris to Bandar Abbas.

The Farman 12w.E. (500 h.p.).

This has three rows each of four cylinders set at an angle between rows of 60°. Cylinders are of steel in pairs with a common sheet-steel jacket to each pair. Valves are overhead and push-rod operated from two camshafts one lying between each pair of cylinders. The rocker gear is enclosed in cast aluminium cases, one to each pair of cylinders. All auxiliary drives are at the front end of the engine.

Two magnetos—or alternatively one magneto and a distributor for a Ducellier coil ignition—are driven from a cross-shaft above the crankshaft at the front end of the crankcase. Oil, water and petrol pumps are on the lower half of the crankcase below the magnetos.

The airscrew end of the crankshaft is fitted with a flange and a set of driving dogs. To this flange may be fitted either an airscrew shaft for a direct drive, or a bevel wheel which forms one unit of a reduction gear. In this case the airscrew shaft also carries a bevel wheel, and the two are interconnected by conical pinions. Alternative gear ratios of 2/1 and 1.53/1 are available.

A partially-stripped engine of this

type which had flown 300 hours without overhaul was on show. Cylinders, valve seats and piston rings were in excellent condition. There was just a discernable amount of shake in the big ends, and none in the little ends. Both the crankshaft and the airscrew shaft bevel wheels showed signs of irregular pitting on the tooth flanks. This had certainly not proceeded very far.

The 500 h.p. Farman has cylinders 130 m/m. bore 160 m/m. stroke, a normal compression ratio of 5.5/1, normal and maximum outputs of 500 h.p. at 2,150 r.p.m. and 560 h.p. at 2,200 r.p.m. The direct-drive engine weighs 470 kg. (1,035 lbs.), the geared type 525 kg. (1,150 lbs.). Fuel and oil consumption are said to be 225 grammes (.5 lbs.) and 10 grammes (.02 lbs.) per h.p. hour.

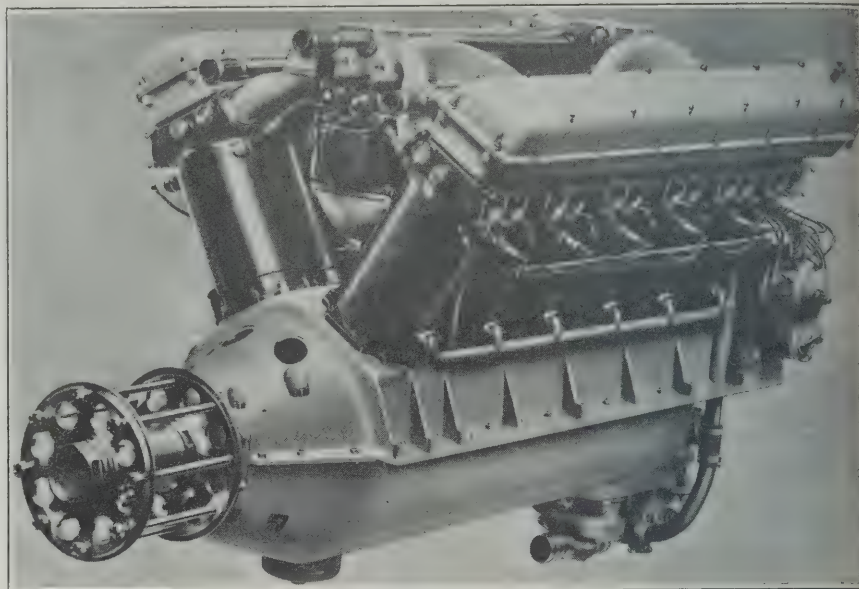
The 700 h.p. Farman.

This engine is of similar design to the 12-cylinder type, but has three blocks of two cylinders in each row, making 18 cylinders in all. The angle between rows is 40°, and the stroke of each cylinder is increased to 180 m/m., the bore remaining 130 m/m.

The same front end auxiliary arrangement, and the same type of reduction gear is supplied in the same ratios. The output is 700 h.p. at 1,850 r.p.m. normal with a maximum of 850 h.p. at 2,100 r.p.m. The direct-drive type weighs 725 kg. (1,600 lbs.) and the geared type 780 kg. (1,720 lbs.). Fuel and oil consumption of 255 grammes (.5 lbs.) and 10 grammes (.02 lbs.) are the same as for the 500 h.p. type.

FIAT.

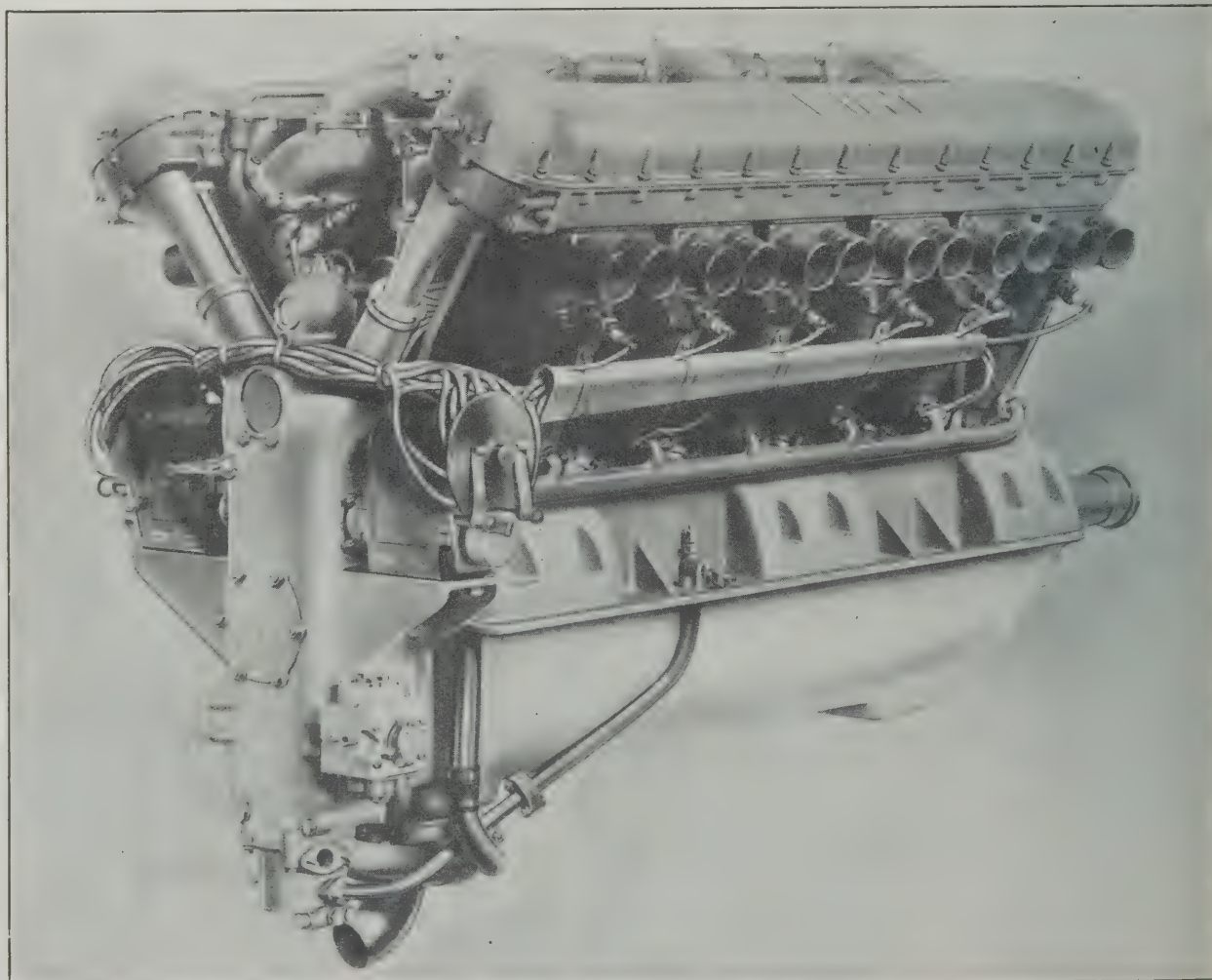
The Fiat Company exhibit the three new types, A.20 of 440 h.p. A.22 of 500 h.p., and A.25 of 900 h.p. The special racing engine used in the Macchi Schneider Trophy machines—known as the A.S.2—is not in Paris, but it is apparently a boosted and slightly enlarged edition of the A.22.



Fiat A.20, 410 h.p.

All three engines are of similar design and are noticeable for compactness and external cleanliness. All have twelve cylinders arranged in a 60° Vee. Each cylinder has a separate steel jacket, and is fitted with four valves per cylinder.

There are two overhead camshafts for each line of cylinders, one operating exhaust and one operating inlet valves. There is a separate cam for each valve on each cylinder, but two sister-cams are spaced considerably closer together than the valves which they control. The camshaft is supported by bearings set between pairs of sister-cams, and cams operate bridge pieces which span the two valve stems. These bridge pieces have central plunger-type guides. In virtue of this



THE SCHNEIDER TROPHY WINNER.—The Fiat A.S.2 developed from the A.22. This was not at the Show.

The article reproduced below is from

"The Times,"

TRADE AND ENGINEERING SUPPLEMENT,

November 13th, 1926.

The British radial air-cooled engine is one of the most remarkable achievements of post-war aero-engine development, and despite early discouragements and some scepticism among the older school of internal combustion engineers, to-day there is not a country in the world which has not been forced to acknowledge the outstanding merit of the air-cooled radial engines designed by the British constructor.

This position, it is interesting to note, has been won in something like five years in the case of the Bristol Jupiter engines, made by the Bristol Aeroplane Company under the direction of their chief designer, Mr. Roy Fedden, and the policy of permitting manufacture outside Great Britain under licence has, in effect, made the supremacy of British design more apparent. Both France and Italy are countries with no mean engineering record, yet in each case the Governments have been willing to accept an engine of British design as the power unit of their fighting aircraft. No higher compliment probably could be desired than that contained in the statement of the French Minister of War, who, in June of this year, had the uncongenial task of defending in the French Chamber the policy of placing large orders for Jupiter engines in preference to French designed aero-engines. In the course of his remarks he said that to-day more than half the fighting units of the British Air Force were fitted with air-cooled engines, whereas the only really efficient engine of this type manufactured in France was the Jupiter engine made under British licence. He added that during the Morocco campaign he had to borrow from the Navy machines fitted with Jupiter engines, because "they were the only machines capable of carrying out efficiently bombing raids against the Riff positions."

Actually the Jupiter radial air-cooled engine has now been fitted into almost every type of French machine, and by May of this year 513 Jupiter engines had been delivered in France, while another 550 were on order, according to the records of the Bristol Company. Similarly, in Italy, a well-known firm of motor-car manufacturers have on order for the Italian Government 550 Jupiter engines, and over 100 engines have already been delivered. In Czechoslovakia an aero-engine factory has been organised on the basis of 50 Jupiters a year. Poland has also given extensive orders for this type of power unit, and aircraft in 16 different countries have installed the Jupiter type. These are impressive figures of the recognition abroad of the merit of British aero-engine design, and only much intensive research since the war has lifted the British radial air-cooled power unit into a position of acknowledged reliability, combined with a better power-weight ratio than its longer-established water-cooled competitors.

The Jupiter engine consists of nine cylinders arranged radially in a single bank around a central drop forged duralumin crankcase and several original features making for reliability, robust construction, and low weight are important factors in its design. The rapidity with which this engine has been brought to its present position must be ascribed entirely to the genius of Mr. Roy Fedden and the concentrated attention devoted to its development both by him and by the Bristol Company. How striking has been the progress in efficiency is illustrated by the following table:—

| Year. | H.P. Normal. | Weight per h.p. |
|-------|-----------------|--------------------|
| 1919 | 354 | 1.95 |
| 1922 | 390 | 2.00 |
| 1923 | 400 | 1.95 |
| 1924 | 435 | 1.79 |
| 1925 | 450 | 1.60 |

Actually the full story is not told by this table, for the latest type—Series VI—is built with three compression ratios and can be run to give a maximum power of 510 b.h.p. The standard commercial engine, with a compression ratio of 5 to 1, is rated at 420 h.p. at ground level at 1,700 r.p.m. and 460 h.p. at 1,870 r.p.m. As a standard Service engine, the compression ratio is raised to 5.3 to 1, at which the power developed for the same revolutions per minute is 450 h.p. and 485 h.p. respectively; while a high-compression Service engine is also provided with a compression ratio of 6.3 to 1. This enables 470 b.h.p. to be developed at 1,700 r.p.m., and no less than 510 b.h.p. at 1,870 r.p.m. The maximum consumption of fuel with the high-compression engine is 29 gallons an hour with 1.25 gallons of oil per hour, but at cruising speed the consumption falls to 22 gallons an hour. The commercial engine uses 27 gallons an hour at maximum consumption, and recent tests have shown a consumption of 18 gallons only at cruising rate.

In addition to the increased performance the Mark VI series has a frontal area reduced by 12 per cent. in comparison with Mark IV, and the extra horse-power has been accompanied by a reduction of 80 lb. in weight.

Naturally the air-cooled radial saves weight, and avoids all the complications associated with the water-cooling system of dissipating unused heat. Experience has also shown that the air-cooled cylinder will operate satisfactorily within a wide range of temperature conditions; it is equally efficient in the tropics and in the Arctic regions. This success has not been won, however, without some disheartening experiences in the early struggles to evolve a reliable power unit. Eight different types of cylinders had to be built in two years before the right type was found, and the first cylinder would not run for more than two hours in an experimental single-cylinder unit without giving trouble. To-day the Bristol Jupiter with its nine cylinders has run for over 225 hours under official observation, with the whole engine sealed, without the slightest trouble, and in the test made this year a distance of 25,000 miles (more than the circumference of the globe at the equator) was covered with an average petrol consumption of 22 gallons.

The same engine subsequently was flown in a Bristol Bloodhound to Egypt and back, and from the start of the first test to the return of the machine to England the only replacements were one valve and one valve-spring. These two efforts may be said to have made the reputation of the radial air-cooled engine, and more than confirmed the experience of a large number of aircraft firms who have fitted Jupiter engines into their machines in order to secure increased performance. Thus a Spad 56 eight-seater when fitted with a Jupiter engine carried 240 lb. extra load, was 6 m.p.h. faster, and had a better take-off and climb. A Fokker F.III secured an increase in paying load of 330 lbs., was 6 m.p.h. faster, and had an improvement of 50 per cent. in take-off and climb. There was a saving of 12 per cent. in fuel consumption, and the permissible time between overhauls was longer. So satisfied were the K.L.M. Commercial Air Transport Company with this result that it has been decided to standardise the Jupiter engine for all their aircraft, and they expect not only to secure increased performance, but also to carry fewer engines on the books for the number of machines in use.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

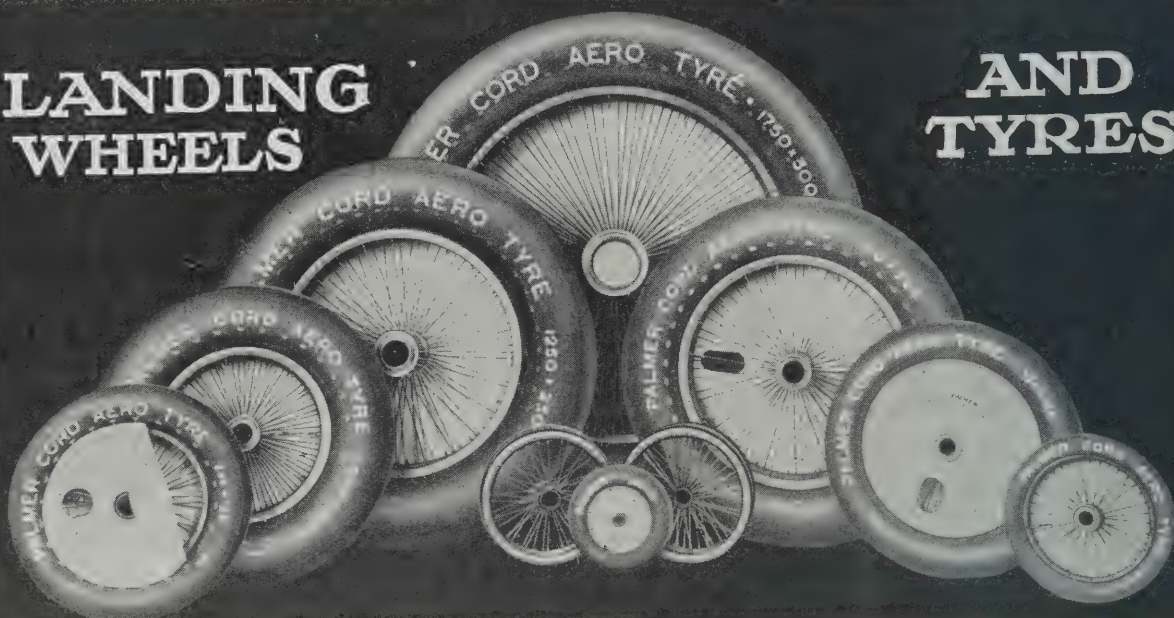


PALMER



LANDING WHEELS

AND TYRES



STANDARD SIZES.

| Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line | Tyre Size | Wheel No. | Hub | | Track Line |
|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 800 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 133 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 154 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 115 | 304.8 | 101.6 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 126 | 304.8 | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | 1750 x 300 | 139 | 400. | 152.4 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | " | 191 | 350. | 150.3 | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | 1750 x 350 | 193 | 400. | 125. | Central |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings. Grease gun equipment is now a standard fitting on all wheels.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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were fitted to every British Aeroplane which left England during the Great War, they have been used as standard equipment on British Aeroplanes ever since. To-day they are employed in practically every country the whole world over.

This phenomenal popularity is due to the fact that these wheels and tyres were devised specifically for use on aircraft, and for this reason they differ entirely in construction from any other wheel or tyre made, whether for Aeroplanes, Cars, Motor-Cycles or Cycles.

Although exceedingly light in weight, they are built to carry heavy loads and to withstand enormous lateral stress; the tyres, rims and wheels being specially designed in order to fully and adequately resist all the severe and extraordinary strains to which the under carriage of an aeroplane is liable to be subjected.

Palmer wheels are fitted with floating bushes, which are interchangeable, and grease gun equipment is now a standard fitting on all sizes.

Palmer wheels and tyres are made in twenty different sizes, from 375 x 55 to 1750 x 350, constituting a range amply covering the requirements of every type of machine.

Les Roues et Pneus d'Atterrissage Palmer

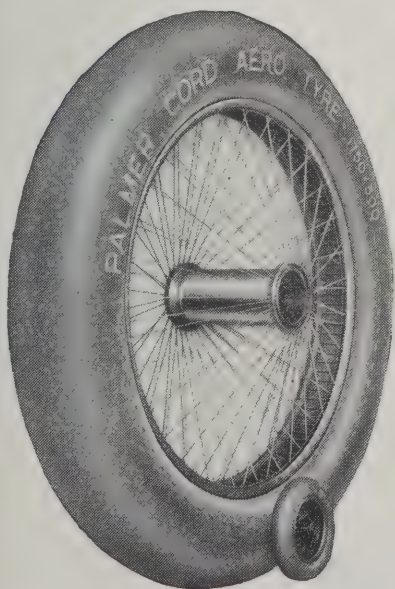
ont été montés sur tous les Avions Britanniques qui ont quitté l'Angleterre pendant la Grande Guerre, et, depuis cette époque ils sont adoptés sur les Avions Britanniques comme équipement standard. Aujourd'hui ils sont employés dans presque tous les pays du Monde.

Ce succès phénoménal est dû au fait que ces roues et pneus ont été expressément créés pour être employés sur Avions, et pour cette raison ils diffèrent totalement au point de vue construction de toutes les autres roues et tous les autres pneus fabriqués. soit pour Avions, pour Automobiles, pour Moto-Cycles, ou pour Bicyclettes.

Malgré leur extrême légèreté, ils peuvent porter des poids considérables et aussi résister à de très gros efforts latéraux. Les pneus, les jantes et les roues sont construits en vue de supporter tous les chocs et toutes les torsions auxquels le train d'atterrissage d'un avion est appelé à être sujet.

Les roues Palmer sont montées avec des coussinets amovibles et interchangeables, et le graissage sous pression est adapté à toutes les dimensions.

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The smaller of these wheels is only 12 in. in diameter, while the larger is taller than the height of the average man.

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Palmer Aero wheel with broad tread pattern tyre specially designed to facilitate landing on soft ground.

This type was largely used during the war and was highly praised by Sir Alan Cobham on the occasion of his flight from London to Rangoon and return in 1925.

Roue Palmer montée d'un pneu avec chape plate, construit spécialement pour permettre l'atterrissage sur terrain mou. Ce pneu a été beaucoup employé pendant la guerre, et a reçu de hautes éloges de Sir Alan Cobham à l'occasion de son vol de Londres à Rangoon et retour en 1925.

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—Paris, Rome, Tunis,
Casablanca, Madrid,
Paris—3,700 miles in
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ARGENTINE.
Major Pedro Zanni—
Amsterdam to Tokio—
9,000 miles, July to
November, 1925.

ITALY.
Commandante F. de Pinedo—
Rome to Australia via India,
round Australia to Tokio and
back to Rome—34,000 miles,
April to November, 1925.

HOLLAND.
T. Van der Hoop—
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Shell Oil has similar successes to its credit—the most recent being the achievement of an Imperial Airways machine, which completed 60,000 miles on *ordinary* Triple Shell Oil (exactly the same as sold to the public everywhere), without the necessity for decarbonising.

SHELL

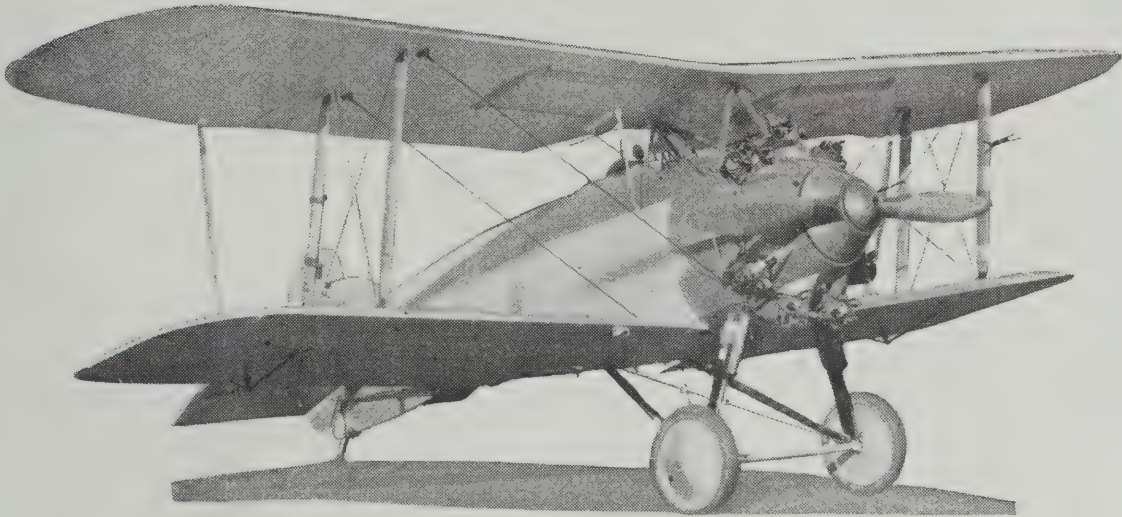
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Single Seater Fighting Scout
for high altitudes.

Tractor biplane fitted with 420 h.p. Bristol Jupiter Air-cooled Radial engine Series VI, sensitive to control, good manoeuvrability and best possible facilities for view in all directions. The tanks are mounted in the top planes giving foolproof gravity feed, with a capacity of 2½ hours' flight at 15,000 ft. with full load. Armament consists of 2 Vickers machine-guns at sides of fuselage firing through the propeller. Provision is also made for fitting racks to carry 4-20 lbs. bombs. Easy accessibility to engine and all essential parts.

Main Specification and Dimensions.

| | |
|--------------------------|--------------|
| Span—Top | 29 ft. 9 in. |
| Span—Bottom | 26 ft. 0 in. |
| Total Wing Area | 264 sq. ft. |
| Total Weight | 2,742 lbs. |
| Load per h.p. | 6.55 lbs. |
| Load per sq. foot | 10.35 lbs. |
| Climb to 15,000 ft. | 11½ mins. |
| Climb to 20,000 ft. | 20 mins. |
| Ceiling Service | 25,500 ft. |
| Speed at 5,000 ft. | 155 m.p.h. |
| Speed at 10,000 ft. | 152 m.p.h. |
| Landing Speed | 48 m.p.h. |

AVION GLOSTER type
GAMECOCK.

Monoplace de chasse aux hautes
altitudes.

Biplan à hélice tractive muni du moteur Bristol "Jupiter" de 420 c.v. Serie VI, à refroidissement par air, aux commandes très sensibles, facilement maniable et permettant une vue ininterrompue dans toutes les directions. Réservoirs logés dans les plans supérieurs (l'alimentation se fait directement par gravité) capacité pour 2½ heures de vol chargé à 4,570 m. de hauteur. Armement constitué par deux mitrailleuses Vickers sur les côtés du fuselage et tirant à travers l'hélice. L'emplacement pour le montage de chassis pour le transport de 4 bombes de 9 kilos. Le moteur et toutes pièces essentielles sont facilement accessibles.

Características Generales et Dimensions.

| | |
|-----------------------------------|---------------|
| Envergure—Plan supérieur | 9.068 m. |
| Envergure—Plan inférieur | 7.925 m. |
| Surface portante totale | 24m.² 525 |
| Poids total | 1,245 kg. |
| Charge au cheval | 2.96 kg. |
| Charge au mètre carré | 50.764 kg. |
| Vitesse de montée à 4,570 m. ... | 11½ min. |
| Vitesse de montée à 6,095 m. | 20 min. |
| Plafond pratique | 7,780 m. |
| Vitesse à 1,524 m. | 249 km./heure |
| Vitesse à 3,050 m. | 244 km./heure |
| Vitesse d'atterrissage | 80 km./heure |

AVION GLOSTER tipo
GAMECOCK.

Monoplaza de caza para las altitudes
elevadas.

Biplano de hélice tractiva provisto de motor Bristol "Jupiter" Marca VI de 420 Cab. de enfriamiento for aire, capaz de "performances" excelentes y muy flexible y facil de manejar, maximo de visibilidad en todos sentidos. Depósitos colocados en el plano superior. Los carburadores se alimentan directamente por gravedad. Capacidad para 2½ horas de vuelo a 4,570 m. cargado. Armamento constituido por dos ametralladoras Vickers colocados a ambos lados del fuselaje y tirando a traves de la hélice. Tambien pueden montarse anaqueles para llevar cuatro bombas de 9 kgs. El motor y todas las partes principales son muy facilmente accesibles.

Características Generales y Dimensiones.

| | |
|--------------------------------------|--------------|
| Envergadura—Plano superior | 9.068 m. |
| Envergadura—Plano inferior | 7.925 m. |
| Superficie total | 24 m.² 525 |
| Peso total | 1,245 kg. |
| Carga por caballo | 2.96 kg. |
| Carga por metro cuadrado | 50.764 kg. |
| Velocidad ascensional a 4,570 m. ... | 11½ min. |
| Velocidad ascensional a 6,095 m. ... | 20 min. |
| Altura maxima alcanzable | 7,780 m. |
| Velocidad a 1,524 m. | 249 km./hora |
| Velocidad a 3,050 m. | 244 km./hora |
| Velocidad de aterrizaje | 80 km./hora |

THE GLOSTER AIRCRAFT CO., LTD.,
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in group evolutions and
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Single Seater Fighters



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SINGLE SEATER**

from a painting by Geoffrey Watson



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—Aeroplane, July 7th, 1926.

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"GLOSTER"



THE GLOSTER GORCOCK.

Single Seater Fighting Scout
for high altitudes.

Tractor biplane of high performance fitted with 525 h.p. Napier Lion Engine, sensitive to control, good manoeuvrability and best possible facilities for view in all directions. The tanks are mounted in the top planes giving foolproof gravity feed, with a capacity for 2½ hours' flight at 15,000 ft. with full load. Water cooling is by means of a long tube type Radiator with shutters slung under the body. Armament consists of 2 Vickers machine-guns at sides of fuselage firing through the propeller. Easy accessibility to engine and all essential parts.

SPECIFICATION
AND
DIMENSIONS
ON
APPLICATION.

AVION GLOSTER type GORCOCK.

Monoplace de chasse aux hautes
altitudes.

Biplan à hélice tractrice, à haute performance, muni du moteur Napier "Lion" de 525 c.v., aux commandes très sensibles, facilement maniable et permettant une vue ininterrompue dans toutes les directions. Réservoirs logés dans les plans supérieurs (l'alimentation se fait directement par gravité) d'une capacité pour 2½ heures de vol chargé à 4,570 mètres de hauteur. Refroidissement de l'eau assuré par un radiateur du type à tubes longs avec obturateurs aménagés sous le corps. Armement constitué par deux mitrailleuses Vickers sur les côtés du fuselage et tirant à travers l'hélice. Le moteur et toutes pièces essentielles sont facilement accessibles.

CARACTERISTIQUES
ET
DIMENSIONS
SUR
DEMANDE.

AVION GLOSTER tipo GORCOCK.

Monoplaza de caza para las altitudes
elevadas.

Biplane de hélice tractiva provisto de motor Napier "Lion" de 525 cab., capaz de "performances" excelentes y muy flexible y fácil de manejar, maximo de visibilidad en todos sentidos. Depósitos colocados en el plano superior. Los carburadores se alimentan directamente por gravedad. Capacidad para 2½ horas de vuelo a 4,570 metros cargado. Enfriamiento por agua efectuado por un radiador de tubos con obturadores, suspendido bajo el fuselaje. Armamento constituido por dos ametralladoras Vickers colocadas a ambos lados del fuselaje y tirando a través de la hélice. El motor y todas las partes principales son muy facilmente accesibles.

CARACTERISTICAS
Y
DIMENSIONES
SOBRE
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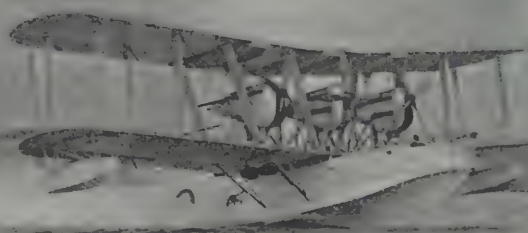
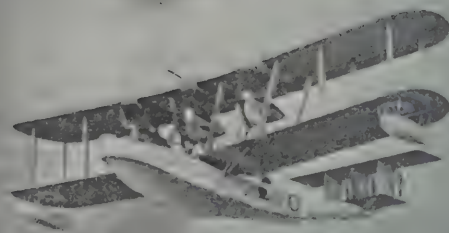
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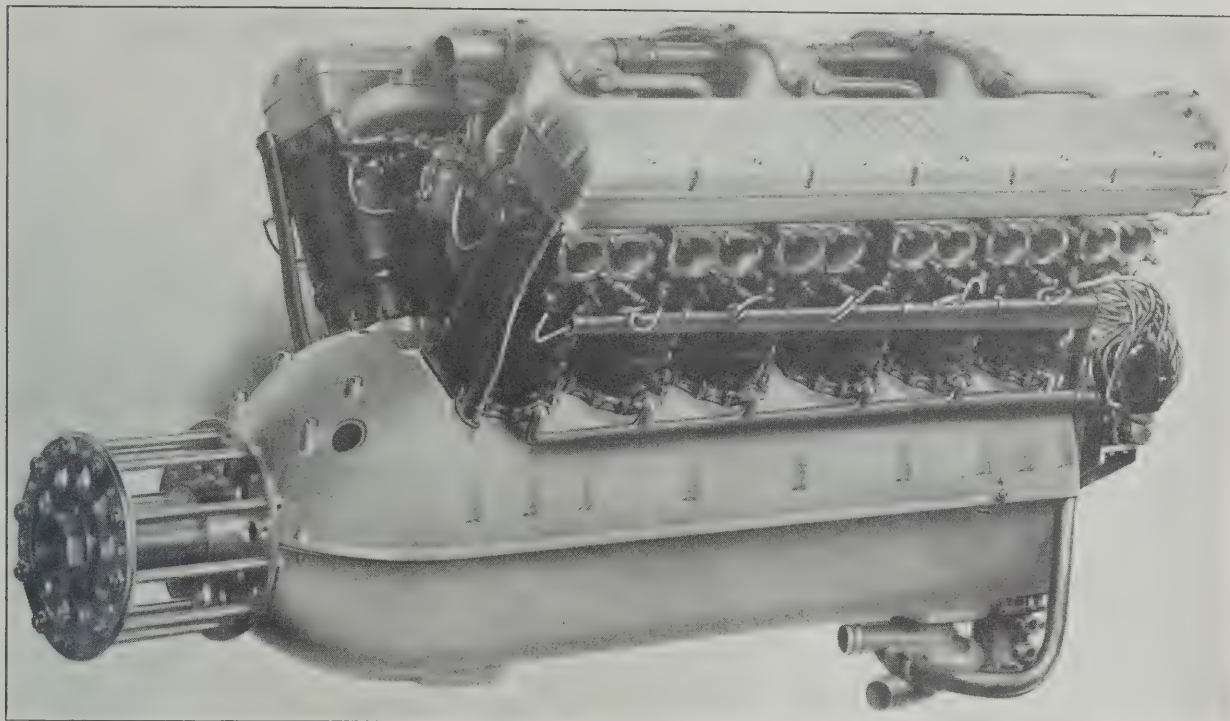
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ITALY'S MOST POWERFUL ENGINE.—The Fiat A.25, of 900 h.p.

arrangement the camshaft is supported extremely close to the point of application of the working loads and is subject to a minimum of deflection.

The valve gear is entirely enclosed in a camcase which serves to tie each line of cylinders into a block.

The types A.20 and A.22 have one master and one articulated rod on each crankpin. In the A.25 one normal and one forked rod is used per crank.

Carburettors are of the Stromberg type, fitted between cylinders. Two are used in the A.20 and A.22, and three in the A.25.

Two magnetos and two plugs per cylinder are fitted in the two smaller engines, and four magnetos and four plugs in the larger.

The A.20 has cylinders 115 m/m. \times 150 m/m., a compression of 5.6/1 and develops 410 h.p. normal, 455 h.p. maximum at 2,400 r.p.m. It weighs 345 kg. (760 lbs.) with water in jackets.

The A.22 has cylinders 135 m/m. \times 160 m/m., a compression of 5.5/1 and develops 550 h.p. normal, 590 h.p. maximum at 2,100 r.p.m. It weighs 460 kg. (1,010 lbs.) with water in jackets.

The A.25 has cylinders 170 m/m. \times 200 m/m., a compression

of 5.1/1 and develops 900 h.p. normal, 990 h.p. maximum at 2,000 r.p.m. The weight with water in the jackets is 845 kg. (1,860 lbs.).

The A.S.2 has cylinders of 140 m/m. bore and 170 m/m. stroke (5 m/m. and 10 m/m. larger than the A.25) and is fitted with pistons giving a 6/1 compression ratio instead of the normal 5.3/1.

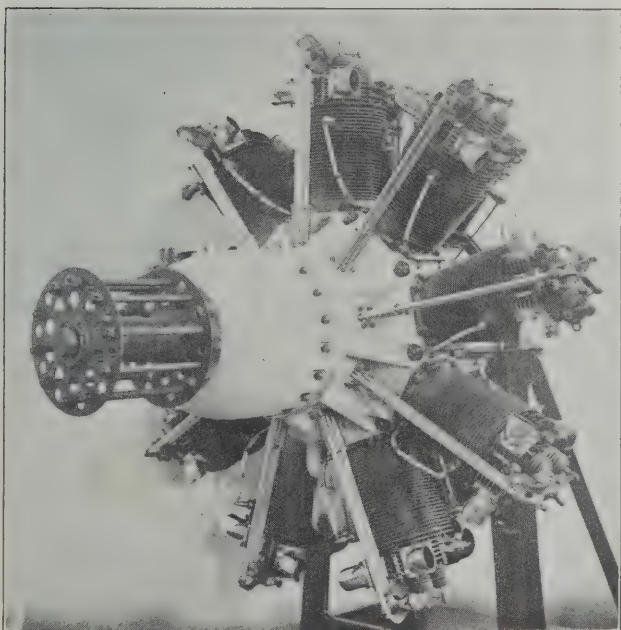
It is of the twelve-cylinder Vee type, with separately-jacketed steel cylinders, each with four overhead valves. Carburettors are arranged within the Vees. The overall dimensions of the engine are 1.584 m. (5 ft. 2½ inches) long, 0.72 m. (2 ft. 5½ ins.) wide, and 0.948 m. (3 ft. 1½ ins.) high. The output is 882 b.h.p. at 2,500 r.p.m., and the weight, including starting distributor, petrol pumps and water in the jackets, is 412 kg. (907 lbs.), giving a weight per h.p. of 1,026 lbs./h.p.

GNOME ET RHONE.

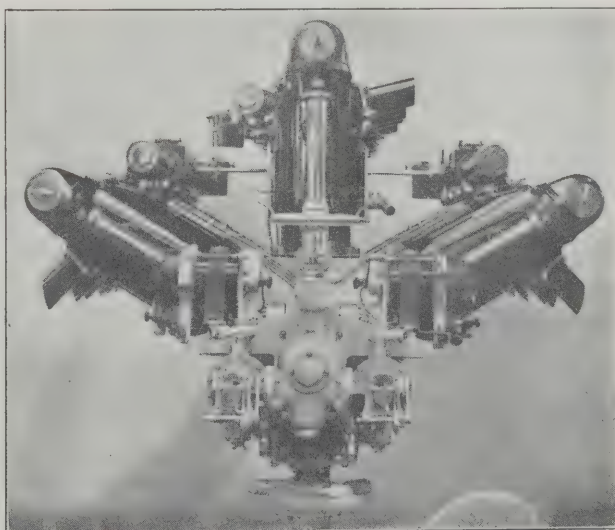
The Jupiter VI.

The Jupiter in two versions is shown on this stand, and both of these versions are new. They are called Series VI, and are to some considerable extent the equivalent of the Bristol Jupiter VI which has not heretofore been available in France.

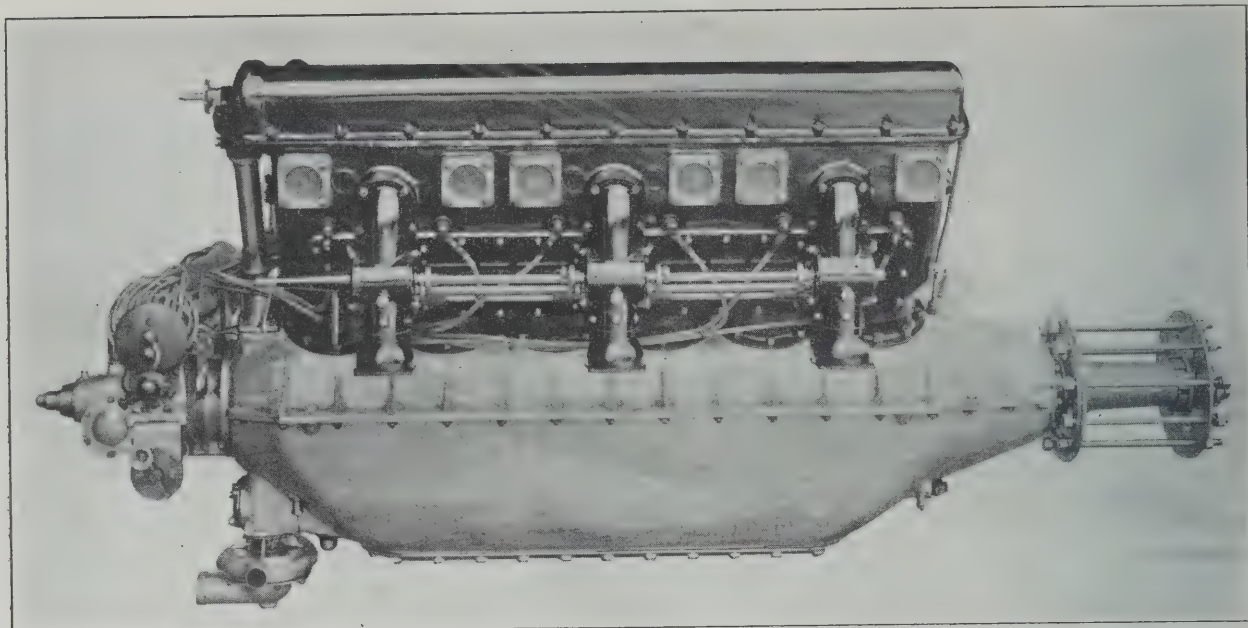
The overall diameter of the new French Jupiter has been reduced from 1.42 m. (56 inches) to 1.33 m. (52.3 inches)—presumably by methods similar to those employed in the Bristol case. It was not possible to discover on the stand



THE JUPITER IN A NEW GUISE.—A Gnome-Rhône Jupiter (Series VI) with reduction gear.



FRONTAL AREA.—A broad-arrow type engine which holds the World's Speed record. The type 50 Hispano-Suiza.



THE WORLD'S DISTANCE RECORD.—The type 51 Hispano-Suiza of 500 h.p. This engine was used in the Breguet XIX, which flew non-stop from Paris to Omsk (4,700 km.) and later Paris to Jask (5,465 km.) (nearly 3,500 miles), the present World's Record.

whether the Bristol two-piece crankshaft and the solid big end are used in this engine, but this is believed to be the case.

What is quite certain is that the Bristol forged duralumin crankcase is not used, the normal cast case remaining.

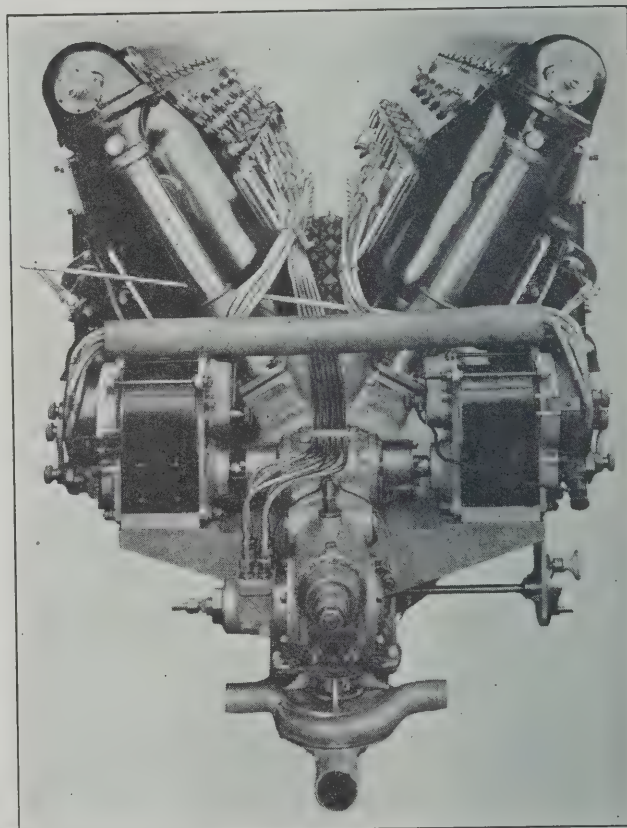
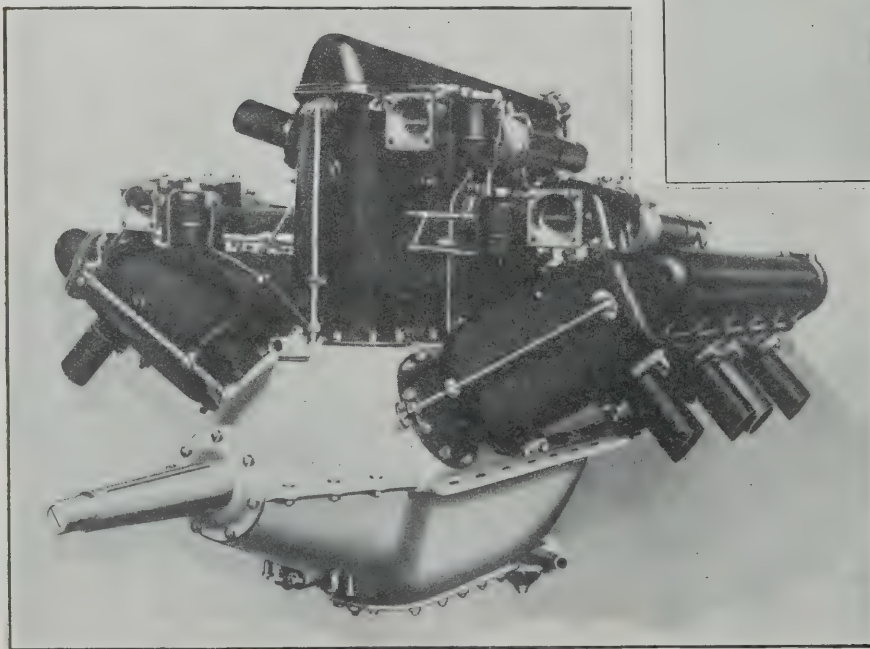
For the rest there is no appreciable difference between the French and the British types. The French Jupiter is slightly heavier and is rated at 480/600 h.p.—the latter figure presumably being based on a rate of revolution for which the British makers will not accept responsibility.

One of the two engines was exhibited with a large cylindrical box on the nose which contains a Farman type 2/1 epicyclic reduction gear. This is however apparently still in the experimental stage.

HISPANO-SUIZA.

The Hispano-Suiza exhibit includes five types of engines. These are the war-time eight-cylinder Vee 150 h.p. and 300 h.p. types, the 12-cylinder broad-arrow 450 h.p. type which at the moment holds the World's speed record, and the twelve-cylinder Vee 500 and 300 h.p. types. Of these two last engines the 500 h.p. holds the World's record for maximum distance in a straight line—Paris—Jask, 5,465 km. (3,400 miles app.) in 32 hours.

The characteristics of the Hispano-Suiza type of engine are

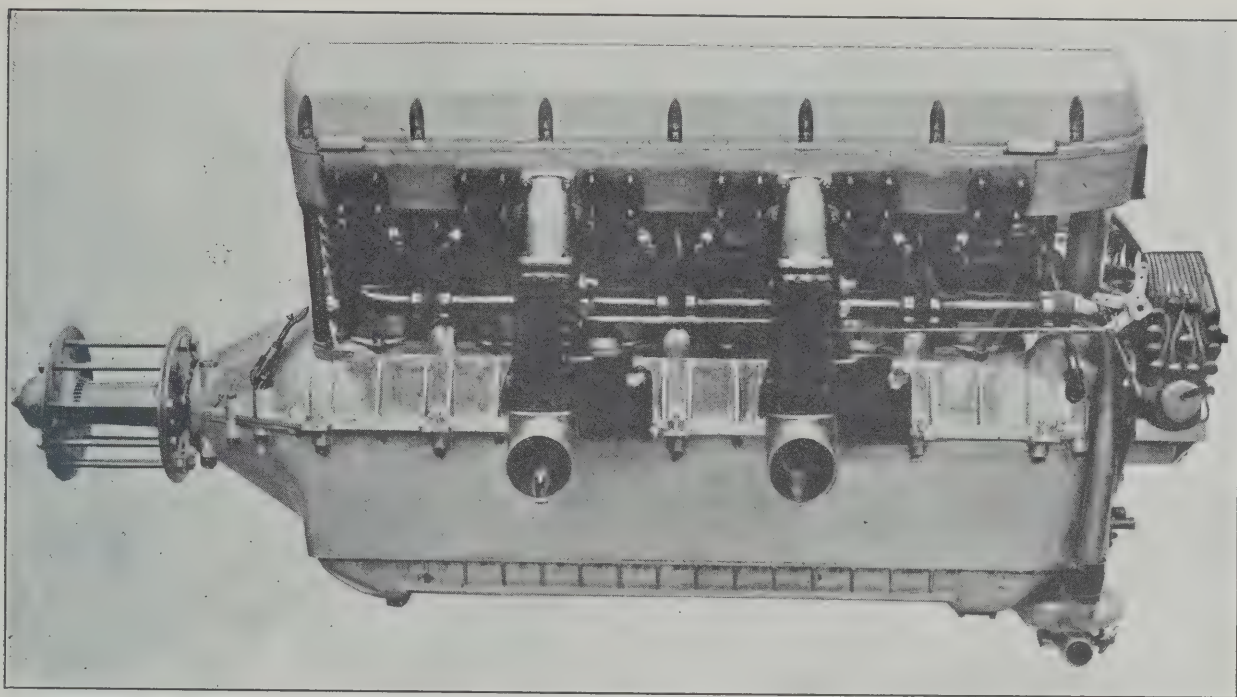


The type 51 500 h.p. Hispano-Suiza.

by now fairly well known. Each row of cylinders is an aluminium alloy monobloc into which steel cylinder liners are screwed while the block is hot. Two types of block are made—the four-cylinder block used in the eight-cylinder engines and in the twelve-cylinder, broad-arrow type, and the six-cylinder block used in the twelve-cylinder Vee engines.

Two valves are fitted per cylinder operated by one single camshaft for each block, by direct contact between the

THE WORLD'S SPEED RECORD.—The type 50, Hispano-Suiza 12-cylinder (broad-arrow) 450 h.p. engine. (World's Speed Record type).



AN ITALIAN RECORD-BREAKER.—The Isotta-Fraschini "Asso"—500 h.p.

cams and large-diameter tappet discs screwed to the valve stems.

The following are the more important data of these engines:—

150 h.p., 8-cylinder Vee, 120 m/m. bore 130 m/m. stroke. Normal output 150 h.p. at 1,500 r.p.m., max. output 170 h.p. at 1,700 r.p.m. Weight dry, 206 kg. (453 lbs.).

300 h.p., 8-cylinder Vee, 140 m/m. bore 150 m/m. stroke, 5.3/1 compression. Normal output 300 h.p.

Type 50, 12-cylinder broad-arrow, 140 m/m. bore 150 m/m. stroke, 5.3/1 compression. Normal output 450 h.p. 1,720 r.p.m. Maximum output 487 h.p. 1,800 r.p.m. Weight dry 375 kg. (826 lbs.).

Type 51, 12-cylinder 60° Vee. Bore 140 m/m. stroke 150 m/m., 5.3/1 compression. Normal output 500 h.p. 1,800

r.p.m. Maximum 520 h.p. at 1,900 r.p.m. Weight dry 420 kg. (926 lbs.).

Type 52, 12-cylinder 60° Vee. Bore 120 m/m. stroke 140 m/m., 5.3/1 compression. Normal output 350 h.p. at 1,750 r.p.m. Maximum 412 h.p. at 2,000 r.p.m. Weight dry 305 kg. (672 lbs.).

ISOTTA FRASCHINI.

The Isotta Fraschini firm showed a number of vertical six-cylinder engines of obsolete type, and a specimen of the new 500 h.p. Asso engine.

This is a very clean and compact engine of the 12-cylinder 60° type having separately jacketed steel cylinders, each row tied together by an aluminium head and cam-case casting. No details of construction can be obtained, but from what can be seen outwardly the engine is up to Italian standards of design and finish.

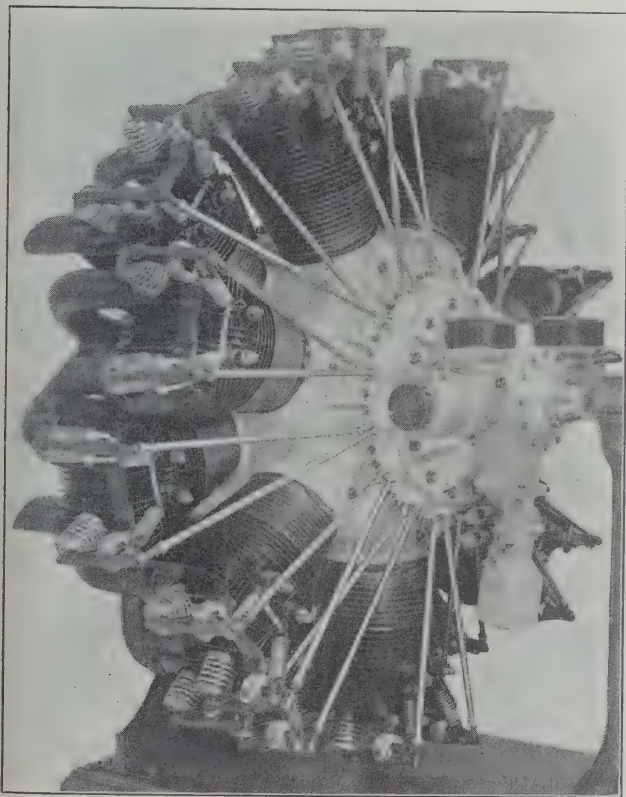
The Asso has cylinders of 140 m/m. bore and 150 m/m. stroke. The compression is 5.5/1 and the normal output 500 h.p. at 1,800 r.p.m. The weight dry is 420 kg (926 lbs.).

LORRAINE DIETRICH.

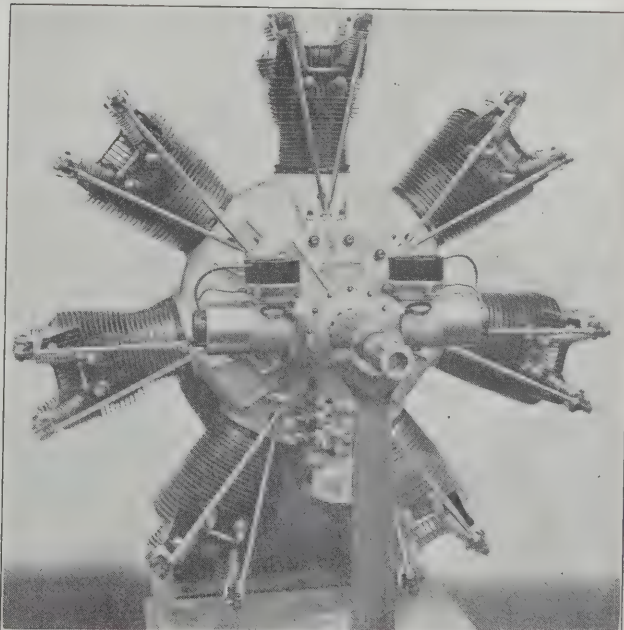
On the Lorraine Dietrich stand there are no less than seven modern types of engine, most of them new. Fortunately they may be grouped together as variants of three different types to facilitate description.

The Broad-Arrow Engines.

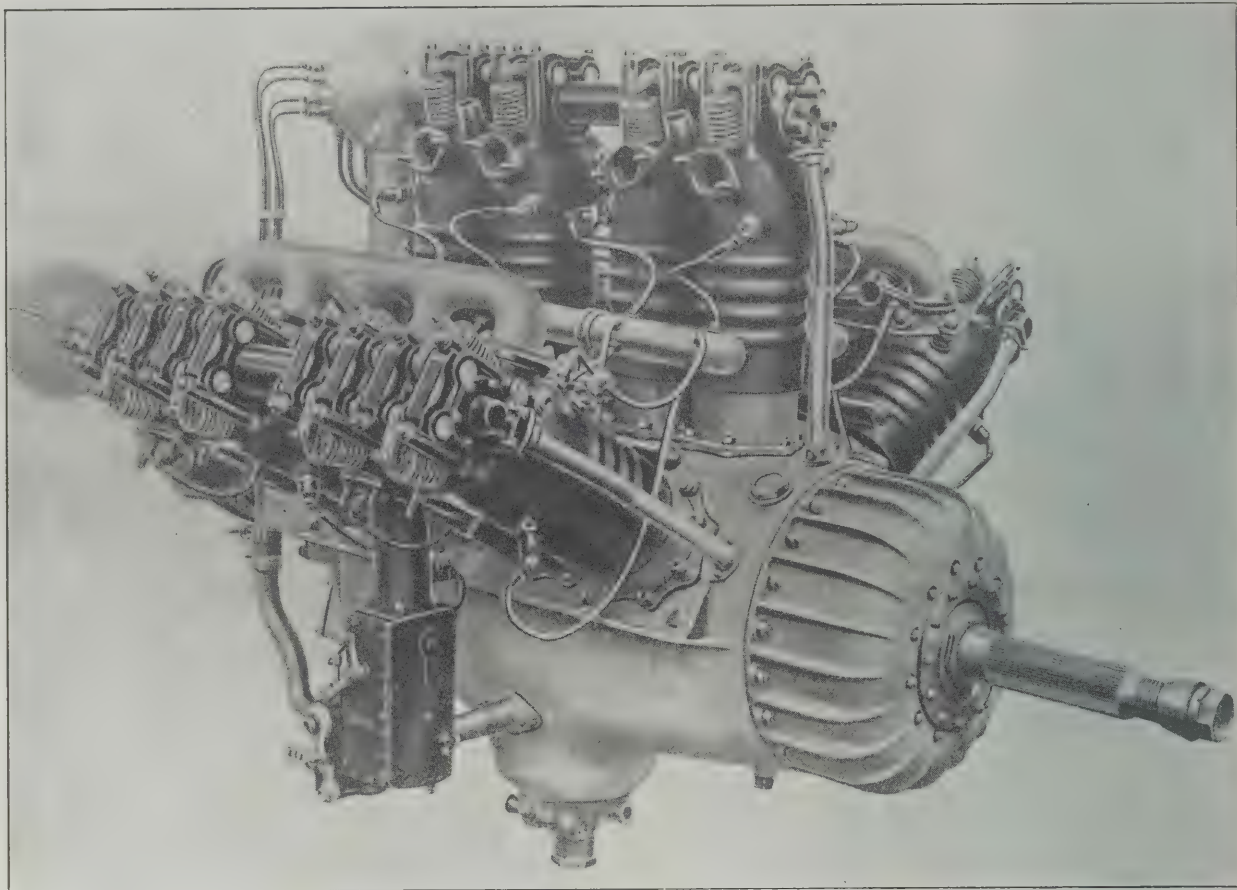
The first of these types is the three-row broad-arrow type.



NOT BUILT UNDER LICENCE, but not altogether free from alien influence in design. The Lorraine Dietrich type 42 fourteen-cylinder air-cooled radial, 450 h.p.



The Lorraine Dietrich 7-cylinder 200 h.p. air-cooled radial.

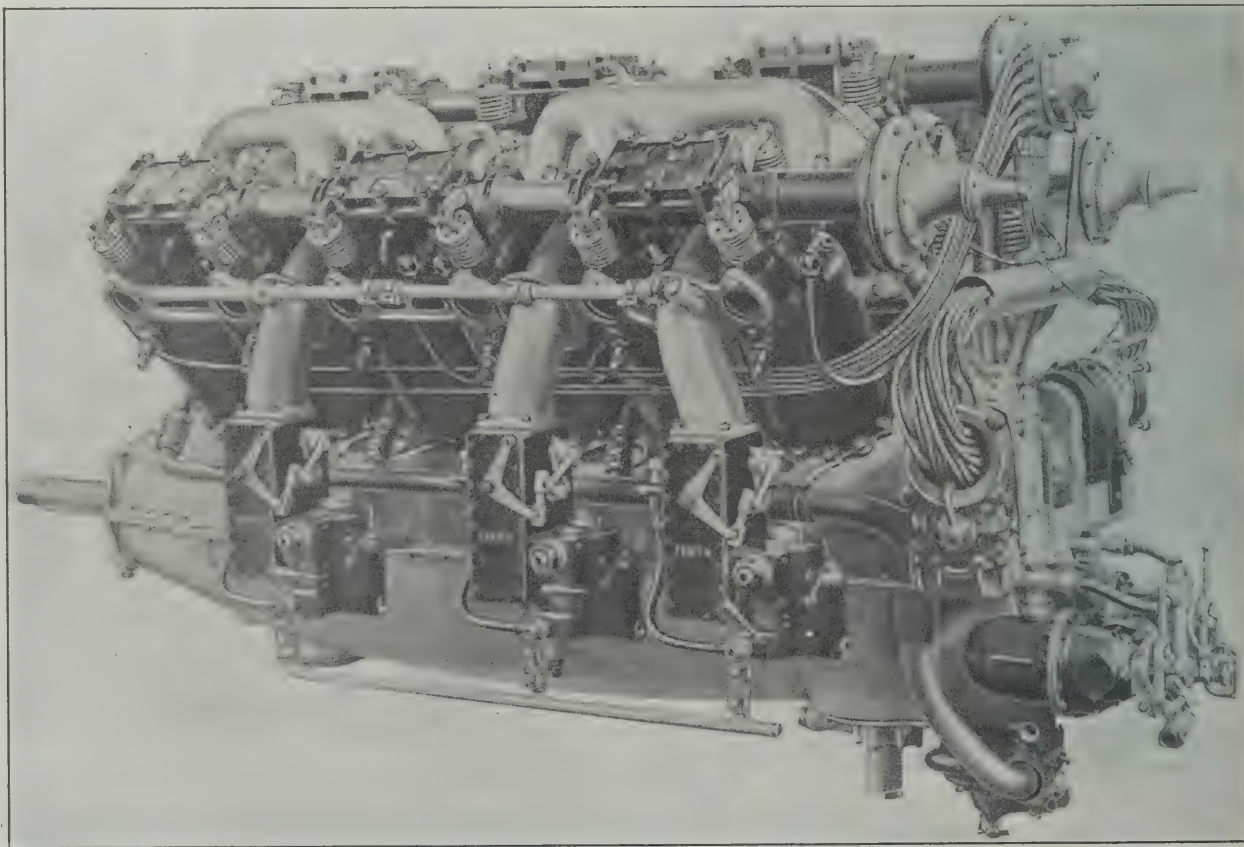


A BREAKER OF RECORDS.—The Lorraine Dietrich 430 h.p. Broad-Arrow type, here shown with a reduction gear. The world's height record is held by a supercharged engine of this type.

Of this type the 450 h.p. twelve-cylinder engine is now world famous. In addition to the standard 450 there is shown the same engine with a 1.54/1 epicyclic reduction gear, and a 650 h.p. 18-cylinder engine which is produced by adding two cylinders to each row of the 450 h.p. type. This is also made as either a direct drive or a geared engine.

All these engines have steel cylinders fitted with welded-on steel jackets each common to a pair of cylinders, arranged in three rows on the crankcase. In the 450 h.p. type there are two and in the 650 h.p. type three such pairs of cylinders per row.

The cylinders are 120 bore x 180 stroke in all cases. In th



The Lorraine Dietrich 650 h.p. direct-drive 18-cylinder engine, a derivative of the famous 450 h.p. 12-cylinder engine.

The 650 h.p. Lorraine Dietrich 18-cylinder Broad-arrow engine fitted with a reduction gear.

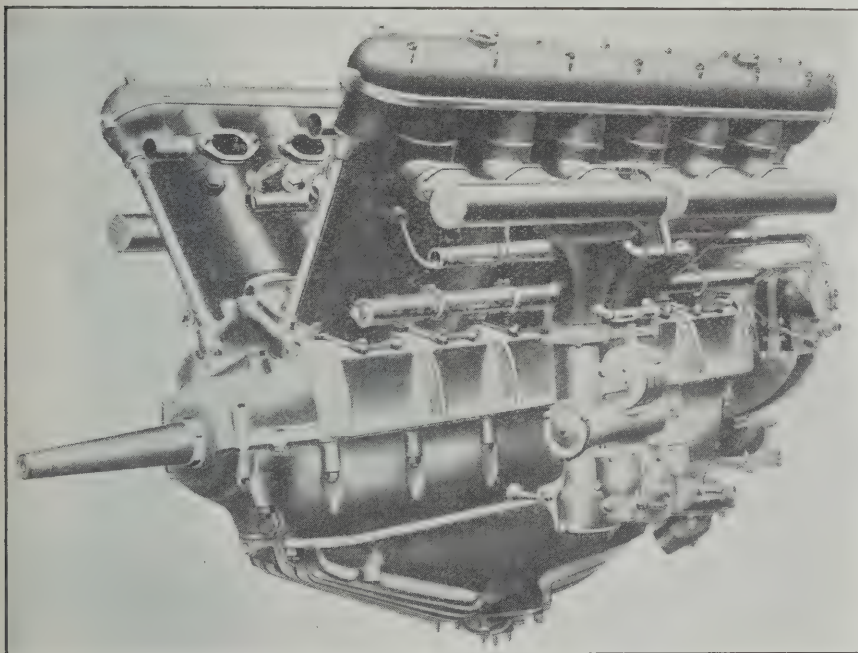
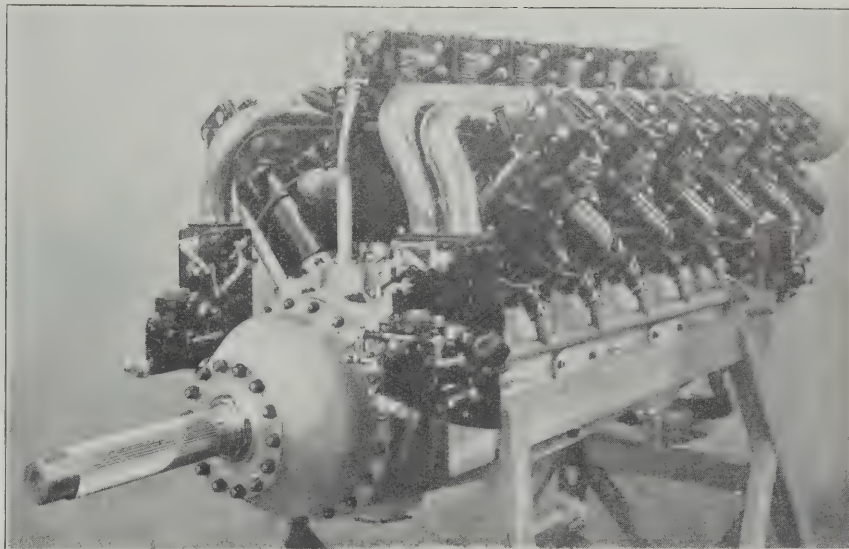
two 450 h.p. engines the compression is 5.5/1 and the normal output 450 h.p. at 1,900 r.p.m. The weight is 380 kg. (816 lbs.) for the ungeared and 415 kg. (915 lbs.) for the geared engine.

In the 650 h.p. type the compression is 6/1, the normal output 650 h.p. at 1,850 r.p.m., and the weight 560 kg. (1,232 lbs.) for the direct-drive engine. The weight of the geared model is not stated. The geared and ungeared types differ in carburettor arrangements.

The 700 h.p. Vee engine.

The next type is a twelve-cylinder 60° Vee of 700 h.p. The characteristic Lorraine grouping of cylinders in pairs each with a common water jacket is found in this engine also.

The cylinders are much larger than in the other Lorraine engines, and the



The cylinder-head casting and the valve gear are somewhat different to those of the Jaguar and Lynx—if memory is not deceptive they are more like the heads and valve gears of the earlier versions of the Jaguar than that now in use.

In another respect these engines recall the early Armstrong-Siddeley radials, for they are fitted with distributors for coil ignition mounted on the front cover of the crankcase, a practice not apparently approved by the Air Ministry for service engines but which undoubtedly has its advantages.

These two engines have a bore and stroke of 135 m/m. x 150 m/m. The 14-cylinder unit develops 450 h.p. at 1,800 r.p.m. and weighs 400 kg. (880 lbs.). The seven-cylinder unit develops 220 h.p. at 1,800 r.p.m. and weighs 260 kg. (573 lbs.).

PANHARD AND LEVASSOR.

This firm showed the same two engines as were to be seen at the last Salon. These are both twelve-cylinder

The Panhard and Levassor 500 h.p. high-altitude engine (type V.12M.).

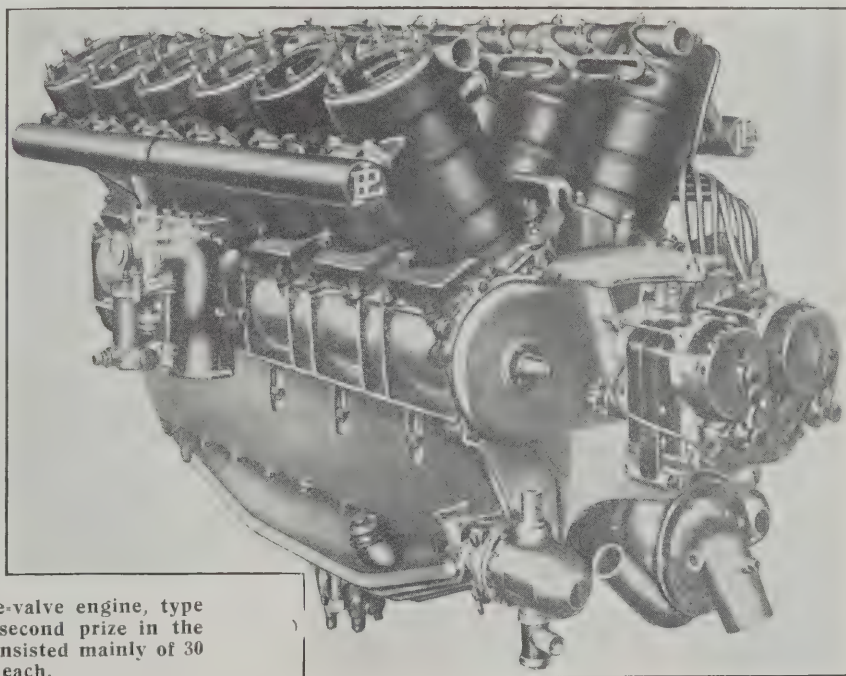
rated h.p. is developed at the low speed of 1,200 r.p.m.

The bore and stroke are 175 m/m. x 225 m/m., and the weight 850 kg. (1,870 lbs.).

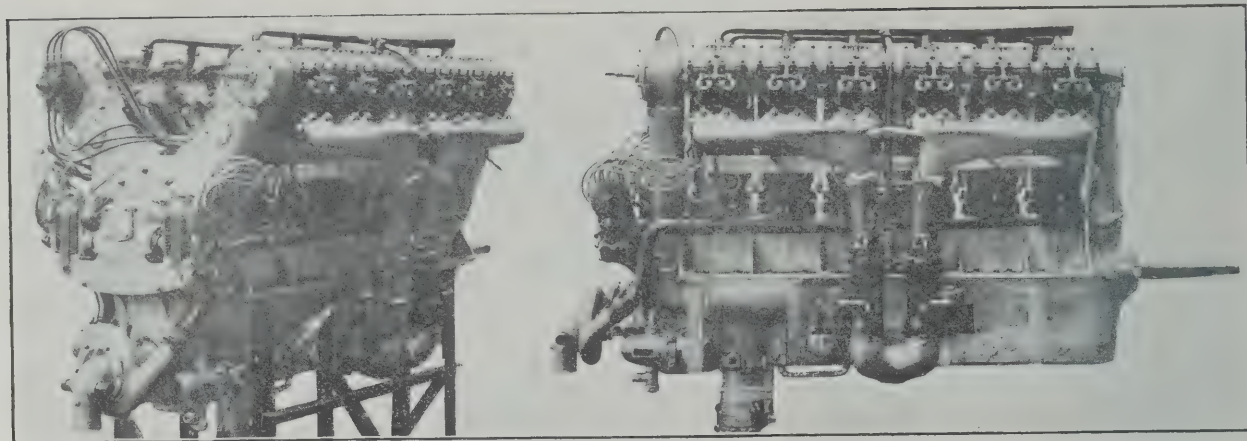
The new Air-cooled Radials.

An entirely new departure is shown by the presence on the Lorraine stand of two air-cooled radial engines. The larger of these is a two-row 14-cylinder unit of 450 h.p., the smaller is a single-row 7-cylinder unit of 200 h.p. It would be far from the truth to say that these were French versions of the Armstrong-Siddeley Jaguar and Lynx—they are not—because the cylinders have notably different dimensions.

But they are undoubtedly engines of the same type and it is understood that they have been designed in friendly collaboration with Armstrong-Siddeley Motors Ltd. Intimate details of construction are not available, but it is obvious that the cylinder construction is identical in design with that used in the British prototype.



The Panhard and Levassor Knight sleeve-valve engine, type V.K.122, of 450 h.p. This engine took second prize in the 1925 French engine competition, which consisted mainly of 30 non-stop runs of 8 hours each.



A TYPE TEST RECORD.—The Renault 420 h.p. engine which gained the first prize in the 1925 *Concours de Grande Endurance*, and the only engine to complete the 30 runs each of 8 hours without trouble.

Vee engines. One is of the normal poppet-valve type and is super-compressed, and has to be run throttled at low altitudes.

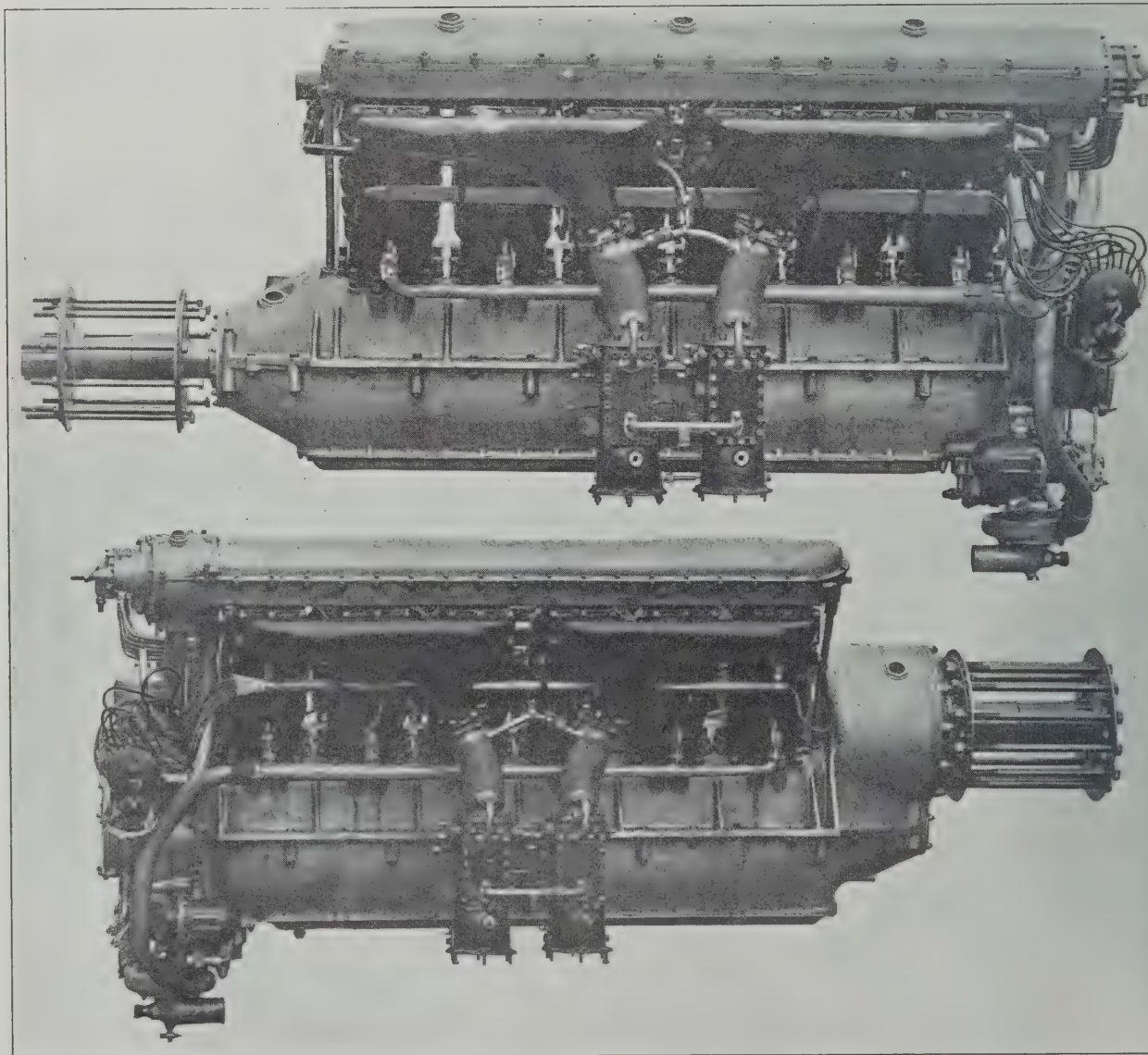
It has cylinders 165 m/m. bore \times 170 stroke, and is rated at 500 h.p. at 1,550 r.p.m., and to maintain 500 h.p. up to 3,000 metres. The weight dry is 590 kg. (1,295 lbs.). So far as is known this engine has never been put into service.

The second engine is fitted with Knight sleeve valves and took part in the 1925 *Concours de Grande Endurance*, in which it gained the second place. It is interesting as showing definitely how great a saving in frontal area is possible by the suppression of overhead valve gear. It must have

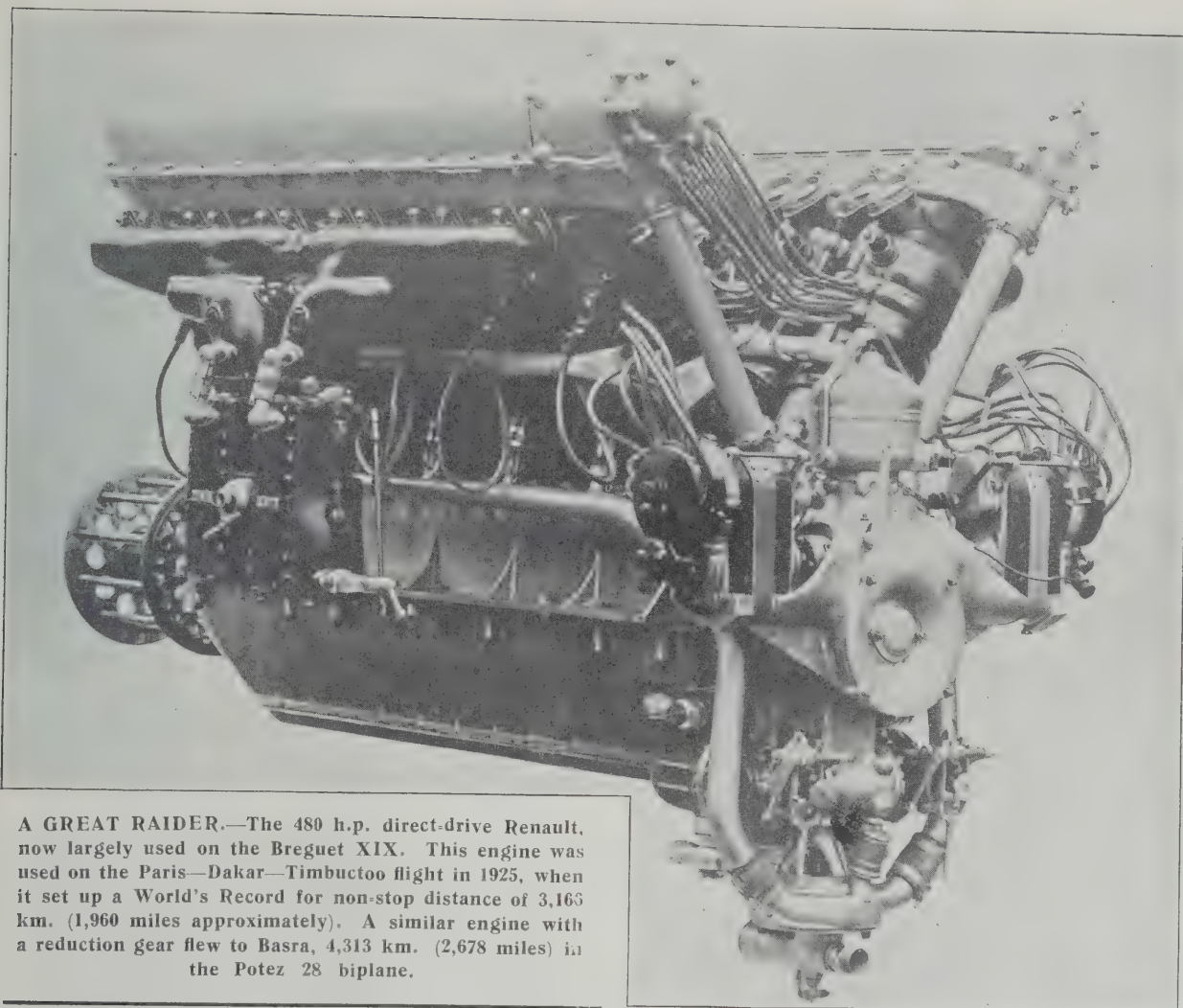
flown to qualify for the *Concours* above mentioned, and it certainly deserves to be tried further.

RENAULT.

The Renault engine which won the first prize in the 1925 Engine Competition which called for 30 non-stop runs of eight hours each, naturally occupies a prominent position on the Renault stand. It seems however that its use is likely to be confined to prize-winning. It is a twelve-cylinder Vee of the same bore and stroke as the standard 480 h.p. engine, rated down to 420 h.p. at very nearly the same r.p.m. as the standard type. The firm do not give the weight of the competition engine, but assuming it not to have been strengthened



The new 700 h.p. Renault—above direct drive and below with reduction gear.

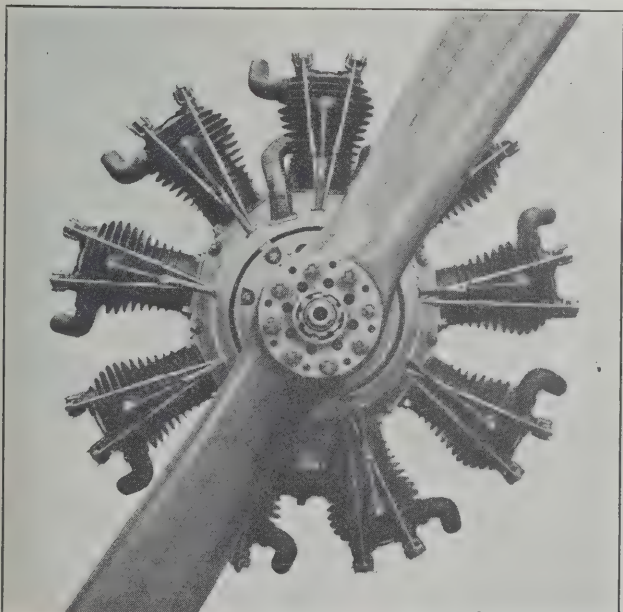


A GREAT RAIDER.—The 480 h.p. direct-drive Renault, now largely used on the Breguet XIX. This engine was used on the Paris—Dakar—Timbuctoo flight in 1925, when it set up a World's Record for non-stop distance of 3,165 km. (1,960 miles approximately). A similar engine with a reduction gear flew to Basra, 4,313 km. (2,678 miles) in the Potez 28 biplane.

up, it is probable that just about as good reliability could be obtained from the standard engine detuned to the same extent.

All modern Renault engines are of the twelve-cylinder 60° Vee water-cooled type. All have steel cylinders with separate sheet steel jackets, tied together at the heads by a valve-gear casing which carries the overhead camshaft.

The 480 h.p. Renault is certainly the best-known and most widely used of this series. This has cylinders 134 m/m. x 180 m/m., a compression of 5.3/1, and is rated at 480 h.p. at 1,600 r.p.m. The weight dry is 460 kgs. (1,015 lbs.).



The Salmson A.D.9, 40 h.p. light aeroplane engine.

The 550 h.p. model is the same engine, fitted with a spur reduction gear and rated at 550 h.p. at 2,000 r.p.m. The weight is increased 35 kg. to 495 kg. (1,090 lbs.).

The next size in Renaults is also made in the geared and the ungeared type. This has cylinders 160 m/m. x 180 m/m., and is rated in both types at 700 h.p. 1,700 r.p.m. The ungeared model weighs 625 kg. (1,375 lbs.), the geared 675 kg. (1,485 lbs.). Presumably it is intended in time to speed up the geared model and increase the rating.

SALMSON.

The Salmson firm show a complete range of their now well-known radial engines both air and water-cooled, the only novelty being the A.B.18, an air-cooled eighteen-cylinder of 460 h.p.

All these engines are of very similar design and by now very familiar in this country. The air- and the water-cooled types differ practically only in regard to cylinders, the air-cooled type having cast-steel cylinders with fins, and the water-cooled type cast-steel plain cylinders with welded-on jackets.

In the case of the double-row 18-cylinder engines, the two cylinder rows are not—as is usual—staggered, and the cylinders are cast in pairs, and when water-cooled, each pair has a common water jacket.

The Salmson engines may be regarded as divided into two ranges. One is a series of three low-powered engines, all air-cooled, ranging from the little 9-cylinder 40 h.p. A.D.9 to the 125 h.p. 9-cylinder A.B.9 of 125 h.p. Of these engines the little 40 h.p. is very attractive in appearance, and should be a delightful engine for a small single-seater.

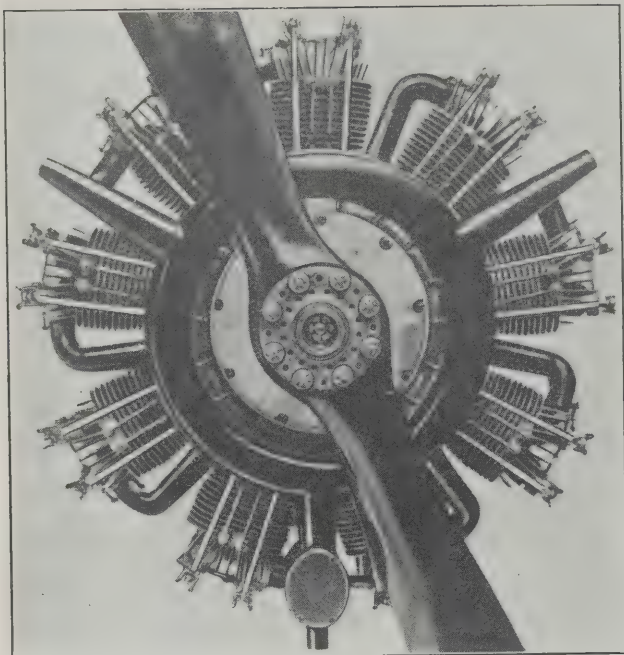
The other range comprises four engines all having the same sized cylinders. Two are single-row 9-cylinder types, two double-row 18-cylinder types. One 9-cylinder and one 18-cylinder type is air-cooled, the other pair is water-cooled.

Leading particulars of these engines are as follows:—

A.D.9, nine cylinders, 70 m/m. bore 86 m/m. stroke, air-cooled, 40 b.h.p. at 2,000 r.p.m. Weight 75 kg. (165 lbs.).

A.C.7, seven cylinders, 100 m/m. bore 130 m/m. stroke, air-cooled, 95 b.h.p. at 1,800 r.p.m. Weight 130 kg. (287 lbs.).

A.C.9, nine cylinders, 100 m/m. bore 130 m/m. stroke, air-cooled, 120 b.h.p. at 1,800 r.p.m. Weight 170 kg. (374 lbs.).



The Salmson A.B.9 air-cooled engine of 230 h.p.

A.B.9, nine-cylinders, 125 m/m. bore 170 m/m. stroke, air-cooled, 230 b.h.p. 1,700 r.p.m. Weight 240 kg. (528 lbs.).

C.M.9, nine-cylinders, 125 m/m. bore 170 m/m. stroke, water-cooled, 260 b.h.p. 1,650 r.p.m. Weight 250 kg. (550 lbs.).

A.B.18, eighteen cylinders, 125 m/m. bore 170 m/m. stroke, air-cooled, 460 b.h.p. 1,700 r.p.m. Weight 490 kg. (1,080 lbs.).

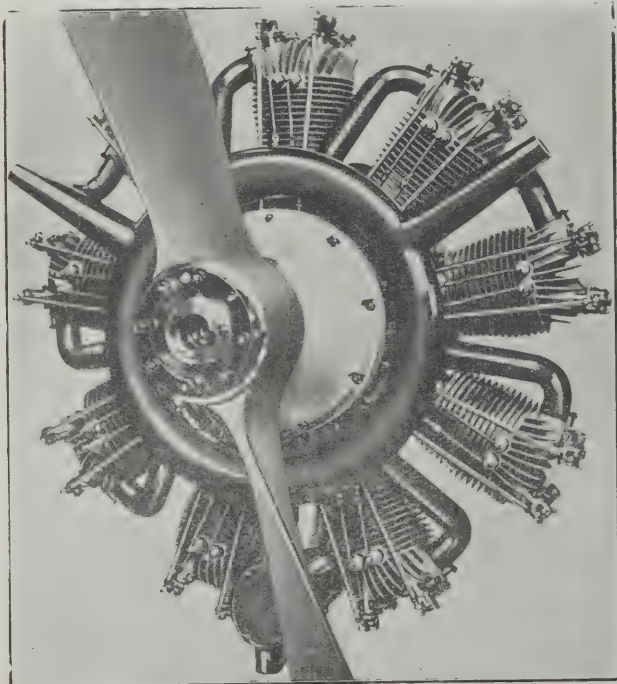
C.M.18, eighteen cylinders, 125 m/m. bore 170 m/m. stroke, water-cooled, 500 b.h.p. Weight 460 kg. (1,012 lbs.).

SAUDA.

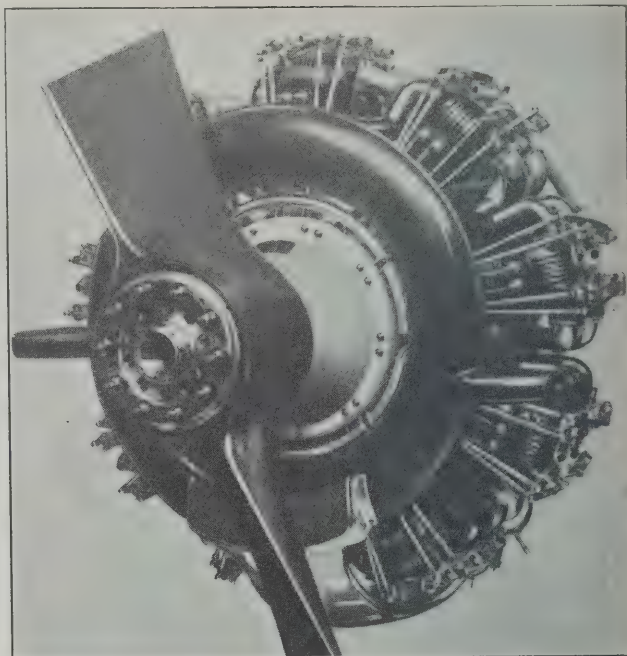
M. Ping. Sauda exhibited on a stand in one of the galleries a 12-cylinder water-cooled Vee engine of which very little can be seen from the outside.

This engine has cylinders and crankcase in one monobloc casting of aluminium alloy, steel sleeves presumably being fitted to the cylinder bore.

As may be seen from the photograph the engine is very clean, and compact. It is claimed that it is also very accessible for overhaul, though it is not demonstrated how this accessibility is achieved. A reduction gear of 1.4 to 1 ratio is built into the engine.



The Salmson A.C.9 air-cooled radial of 120 h.p.



The Salmson C.M.18, a water-cooled eighteen-cylinder engine of 500 h.p.

The engine is known as the "Cappa 18" and has the following characteristics:—Bore 120 m/m., stroke 135 m/m. Normal output 400 h.p. at 1,600 r.p.m. Weight 380 kg. (836 lbs.).

WALTER.

The Walter firm showed all three of their air-cooled radials, the 60 h.p., 85 h.p. and 110 h.p. These engines are all of similar design, have identical cylinders, and differ only in regard to number of cylinders.

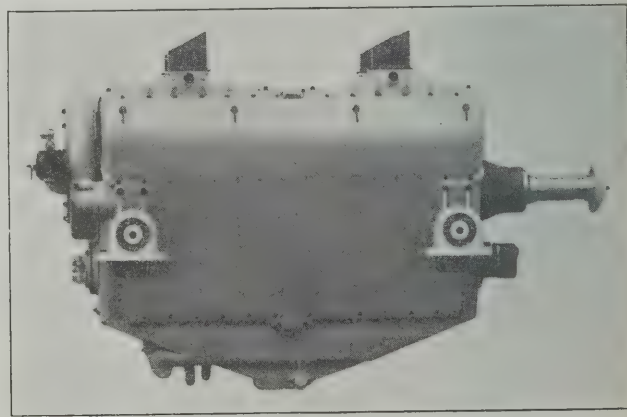
The cylinders are of steel with cast-on aluminium fins and a cast-iron head bolted on. Two overhead valves per cylinder are operated by push rods in the normal manner. Two Scentilta magnetos, and a Solex carburettor are compactly grouped on the rear cover of the crankcase.

These engines are excellently finished, and their appearance is in complete accord with the high reputation they have achieved in service.

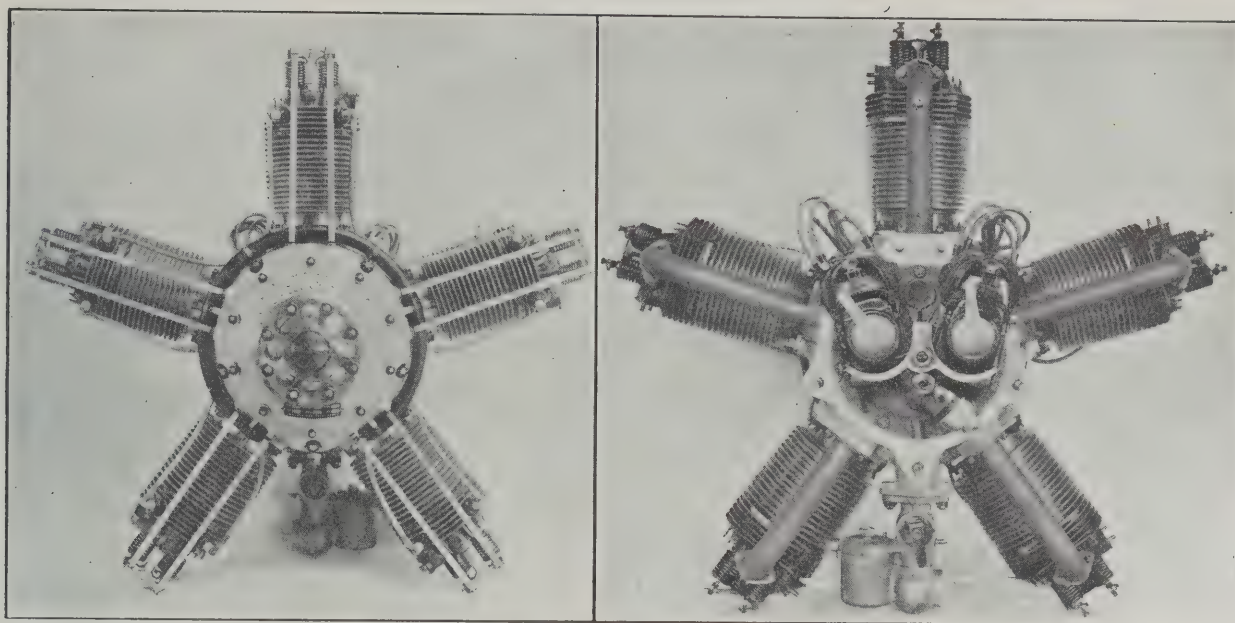
These engines have the following characteristics:—Bore 105 m/m. stroke 120 m/m. Five-cylinder type, normal output 60 h.p. at 1,400 r.p.m., maximum 70 h.p. at 1,700 r.p.m. Weight 102 kg. (224 lbs.). Seven-cylinder type, normal output 85 h.p. 1,400 r.p.m., maximum 90 h.p. at 1,460 r.p.m. Weight 125 kg. (275 lbs.). Nine-cylinder type, normal output 110 h.p. at 1,450 r.p.m., maximum 120 h.p. at 1,600. Weight 152 kg. (335 lbs.).

All three engines are said to consume 235 grammes (.52 lbs.) of fuel per h.p. hour.

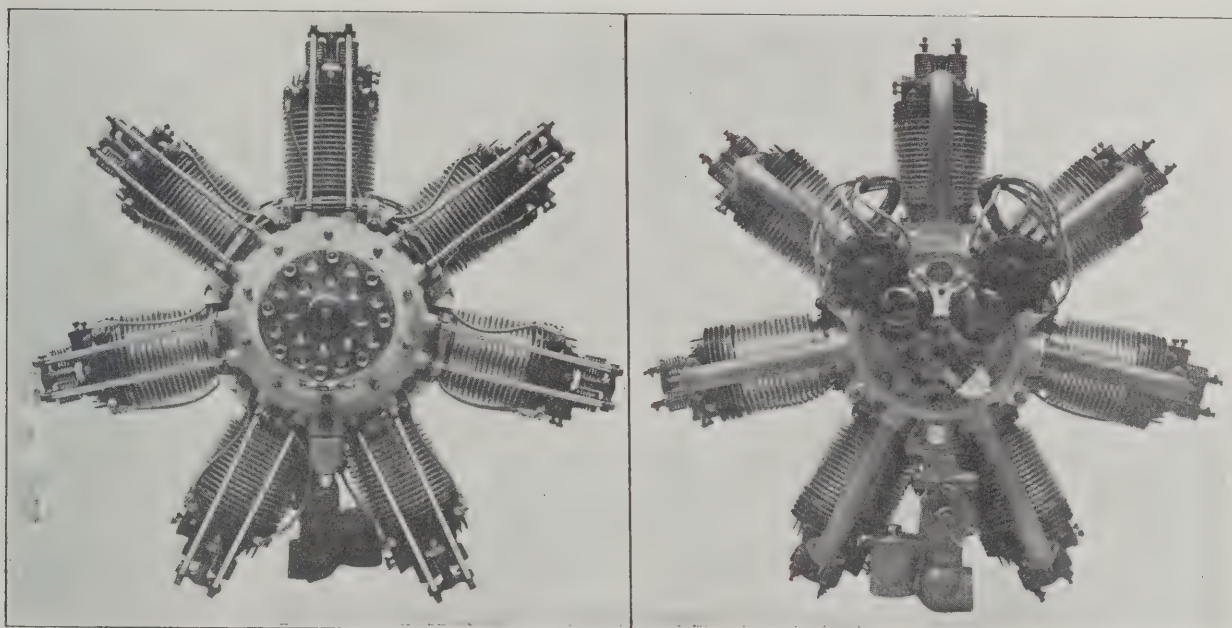
The Walter Co. are the Czecho-Slovakian licensees for the Jupiter engine. They do not exhibit a Jupiter engine, but in the annex devoted to the Czecho-Slovakian aircraft industry a number of parts of Jupiters of their make are to be seen. These are splendid examples of good workmanship.



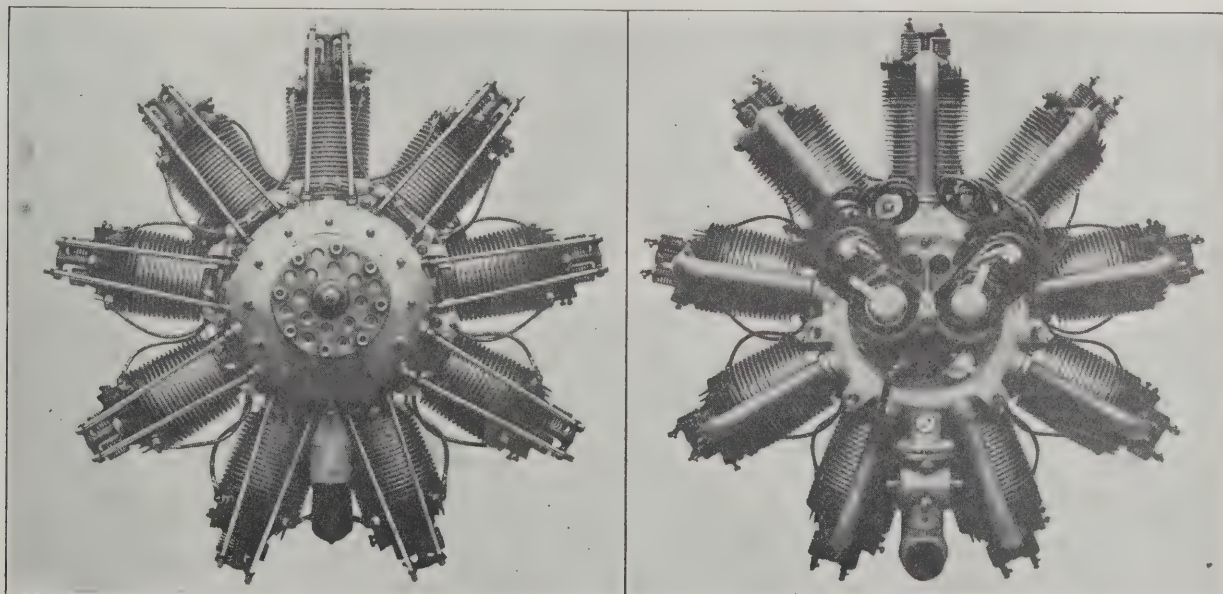
The Sauda Cappa 18 engine of 400 h.p.



For Light Aeroplanes :—The Walter 60 h.p. 5-cylinder radial.



For Less Light Aeroplanes :—The Walter 85 h.p. 7-cylinder radial.



For Tourers :—The Walter 110 h.p. 9-cylinder radial.

ENGINES AT THE SALON.

| Maker's Name. | Designation. | Type. | Cooling. | No. of Cylinders | Bore. m/m | Stroke. m/m | Compression. | Normal Output. | Maximum Output. | Weight. | Weight per h.p. | Fuel per h.p. hour. | Oil per h.p. hour. | Remarks. |
|--------------------|---------------------|--------------------|----------|------------------|-----------|-------------|--------------|-------------------------|-------------------------|-----------------------|------------------------|----------------------|----------------------|--|
| ARMSTRONG SIDDELEY | Jaguar 385/400 h.p. | Radial | A | 14 | 127 | 140 | 5/1 | 385 h.p. 1700 r.p.m. | 425 h.p. 1900 r.p.m. | 770 lbs. 348 kgs. | 1.8 lbs. 0.82 kgs. | .53 lbs. 240 grs. | .031 lbs. 14 grs. | — |
| ARMSTRONG SIDDELEY | Lynx 200 h.p. | Radial | A | 7 | 127 | 140 | 5/1 | 180 h.p. 1620 r.p.m. | 210 h.p. 1800 r.p.m. | 480 lbs. 218 kgs. | 2.28 lbs. 1.04 kgs. | .53 lbs. 240 grs. | .031 lbs. 14 grs. | — |
| ARMSTRONG SIDDELEY | Mongoose 125 h.p. | Radial | A | 5 | 127 | 140 | 5/1 | 125 h.p. 1620 r.p.m. | 150 h.p. 1750 r.p.m. | 340 lbs. 154 kgs. | 2.26 lbs. 1.03 kgs. | — | — | — |
| ARMSTRONG SIDDELEY | Genet 60 h.p. | Radial | A | 5 | 101.6 | 101.6 | 5.2/1 | 65 h.p. 1820 r.p.m. | 75 h.p. | 168 lbs. 76 kgs. | 2.24 lbs. 1.02 kgs. | .55 lbs. 250 grs. | .03 lbs. 14 grs. | — |
| BREITFELD-DANEK | B.D. 500 h.p. | 60° Vee | W | 12 | 160 | 190 | — | 450 h.p. 1400 r.p.m. | — | 1100 lbs. 550 kgs. | 2.45 lbs. 1.22 kgs. | .43 lbs. 195 grs. | — | Super-compression altitude engine |
| BREITFELD-DANEK | Perun II | Vertical | W | 6 | 160 | 190 | — | 240 h.p. 1400 r.p.m. | — | 696 lbs. 315 kgs. | 2.9 lbs. 1.31 kgs. | .42 lbs. 190 grs. | .026 lbs. 12 grs. | Super-compression altitude engine |
| BRISTOL | Jupiter VI 450 h.p. | Radial | A | 9 | 146 | 190 | 5.3/1 | 450 h.p. 1700 r.p.m. | 485 h.p. 1870 r.p.m. | 730 lbs. 331 kgs. | 1.5 lbs. .68 kgs. | .52 lbs. 235 grs. | .03 lbs. 14 grs. | — |
| BRISTOL | Lucifer IV 125 h.p. | Radial | A | 3 | 146 | 159 | 5.3/1 | 130 h.p. 1700 r.p.m. | 140 h.p. 1870 r.p.m. | 330 lbs. 150 kgs. | 2.36 lbs. 1.07 kgs. | .54 lbs. 242 grs. | .037 lbs. 17 grs. | — |
| BRISTOL | Cherub III 32 h.p. | Horizontal Opposed | A | 2 | 90 | 96.5 | 5.5/1 | 32 h.p. 2900 r.p.m. | 36 h.p. 3200 r.p.m. | 100 lbs. 45.4 kgs. | 2.78 lbs. 1.25 kgs. | .55 lbs. 250 grs. | .034 lbs. 16 grs. | — |
| CAFFORT | — | Horizontal Opposed | W | 12 | 145 | 150 | 5.3/1 | 500 h.p. 2000 r.p.m. | — | 1320 lbs. 600 kgs. | 2.64 lbs. 1.2 kgs. | .55 lbs. 250 grs. | .044 lbs. 20 grs. | 1.88:1 reduction gear |
| FARMAN | 12 wE. 500 h.p. | Broad Arrow | W | 12 | 130 | 160 | — | 500 h.p. 2150 r.p.m. | 560 h.p. 2200 r.p.m. | 1150 lbs. 525 kgs. | 2.05 lbs. .94 kgs. | .50 lbs. 225 grs. | — | Reduction gear. Duration Record Type |
| FARMAN | 18 wD. 700 h.p. | Broad Arrow | W | 18 | 130 | 180 | — | 700 h.p. 1850 r.p.m. | 820 h.p. 2100 r.p.m. | 1720 lbs. 780 kgs. | 2.1 lbs. .96 kgs. | .50 lbs. 225 grs. | — | Reduction gear of various ratios available |
| FIAT | A.20 400 h.p. | 60° Vee | W | 12 | 115 | 150 | 5.6/1 | 410 h.p. | 455 h.p. 2400 r.p.m. | 760 lbs. 345 kgs. | 1.67 lbs. 0.76 kgs. | — | — | — |
| FIAT | A.22 550 h.p. | 60° Vee | W | 12 | 155 | 160 | 5.5/1 | 550 h.p. | 590 h.p. 2100 r.p.m. | 1015 lbs. 460 kgs. | 1.72 lbs. 0.78 kgs. | — | — | — |
| FIAT | A.25 900 h.p. | 60° Vee | W | 12 | 170 | 200 | 5.1/1 | 900 h.p. | 980 h.p. 2000 r.p.m. | 1860 lbs. 845 kgs. | 1.9 lbs. 0.86 kgs. | — | — | — |
| GNOME RHONE | Jupiter VI | Radial | A | 9 | 146 | 190 | — | — | 480 h.p. 2000 r.p.m. | 750 lbs. 340 kgs. | 1.56 lbs. .71 kgs. | .55 lbs. 225 grs. | .046 lbs. 21 grs. | — |
| GNOME RHONE | Jupiter VI | Radial | A | 9 | 146 | 190 | — | — | — | — | — | — | — | 2/1 reduction gear |
| HISPANO-SUIZA | 150 h.p. | 90° Vee | W | 8 | 120 | 130 | — | 150 h.p. 1500 r.p.m. | 170 h.p. 1700 r.p.m. | 453 lbs. 206 kgs. | 2.66 lbs. 1.21 kgs. | — | — | — |
| HISPANO-SUIZA | 300 h.p. | 90° Vee | W | 8 | 140 | 150 | 5.3/1 | 300 h.p. | — | — | — | — | — | — |
| HISPANO-SUIZA | 50 | Broad Arrow | W | 12 | 140 | 150 | 5.3/1 | 450 h.p. 1725 r.p.m. | 487 h.p. 1800 r.p.m. | 826 lbs. 375 kgs. | 1.74 lbs. .77 kgs. | — | — | Speed Record Type |
| HISPANO-SUIZA | 51 | 60° Vee | W | 12 | 140 | 150 | 5.3/1 | 500 h.p. 1800 r.p.m. | 520 h.p. 1900 r.p.m. | 926 lbs. 420 kgs. | 1.78 lbs. .81 kgs. | — | — | Distance Record Type |
| HISPANO-SUIZA | 52 | 60° Vee | W | 12 | 120 | 140 | 5.3/1 | 350 h.p. 1750 r.p.m. | 412 h.p. 2000 r.p.m. | 672 lbs. 305 kgs. | 1.63 lbs. .74 kgs. | — | — | — |
| ISOTTA FRASCHINI | Asso | 60° Vee | W | 12 | 140 | 150 | 5.5/1 | 500 h.p. 1800 r.p.m. | 550 h.p. | 926 lbs. 420 kgs. | 1.68 lbs. .76 kgs. | — | — | — |
| LORRAINE DIETRICH | 450 h.p. | Broad Arrow | W | 12 | 120 | 180 | 5.5/1 | 450 h.p. 1900 r.p.m. | — | 816 lbs. 380 kgs. | 1.81 lbs. .85 kgs. | .52 lbs. 235 grs. | — | Altitude Record Type |
| LORRAINE DIETRICH | 450 h.p. | Broad Arrow | W | 12 | 120 | 180 | 5.5/1 | 450 h.p. 1900 r.p.m. | — | 915 lbs. 415 kgs. | 2.02 lbs. .92 kgs. | — | — | 1.54/1 epicyclic reduction gear |
| LORRAINE DIETRICH | 650 h.p. | Broad Arrow | W | 18 | 120 | 180 | 6/1 | 650 h.p. 1850 r.p.m. | 700 h.p. 1900 r.p.m. | 1232 lbs. 560 kgs. | 1.76 lbs. .8 kgs. | — | — | — |

ENGINES AT THE SALON—Continued.

| Maker's Name. | Designation. | Type. | Cooling. | No. of Cylinders. | Bore. m/m | Stroke. m/m | Compression. | Normal Output. | Maximum Output. | Weight. | Weight per h.p. | Fuel per h.p. hour. | Oil per h.p. hour. | Remarks. |
|--------------------|------------------|-------------|----------|-------------------|-----------|-------------|--------------|-------------------------|-------------------------|-----------------------|------------------------|----------------------|----------------------|--|
| LORRAINE DIETRICH | 650 h.p. | Broad Arrow | W | 18 | 120 | 180 | — | — | — | — | — | — | — | 1.54/1 epicyclic reduction gear |
| LORRAINE DIETRICH | No. 34 700 h.p. | 60° Vee | W | 12 | 175 | 225 | — | 700 h.p. 1200 r.p.m. | — | 1870 lbs. 850 kgs. | 2.68 lbs. 1.21 kgs. | .53 lbs. 240 grs. | .044 lbs. 22 grs. | — |
| LORRAINE DIETRICH | No. 42 450 h.p. | Radial | A | 14 | 135 | 150 | — | — | 450 h.p. 1800 r.p.m. | 880 lbs. 400 kgs. | 1.96 lbs. .89 kgs. | — | — | — |
| LORRAINE DIETRICH | No. 47 220 h.p. | Radial | A | 7 | 135 | 150 | — | 200 h.p. 1650 r.p.m. | 220 h.p. 1800 r.p.m. | 573 lbs. 260 kgs. | 2.6 lbs. .85 kgs. | — | — | — |
| PANHARD & LEVASSOR | V.K.122 450 h.p. | 60° Vee | W | 12 | 140 | 170 | 5.4/1 | 450 h.p. 1500 r.p.m. | 525 h.p. 1800 r.p.m. | 1200 lbs. 545 kgs. | 2.29 lbs. 1.04 kgs. | — | — | Knight sleeve valves |
| PANHARD & LEVASSOR | V12M 500 h.p. | 60° Vee | W | 12 | 165 | 170 | 6/1 | 500 h.p. 1550 r.p.m. | — | 1295 lbs. 590 kgs. | 2.6 lbs. 1.18 kgs. | — | — | Super-compressed high altitude type |
| RENAULT | 420 h.p. | 60° Vee | W | 12 | 134 | 180 | — | 420 h.p. 1550 r.p.m. | — | — | — | — | — | 1st prize, Concours de Grande Endurance 1925 |
| RENAULT | 480 h.p. | 60° Vee | W | 12 | 134 | 180 | 5.3/1 | 480 h.p. 1600 r.p.m. | 520 h.p. 1650 r.p.m. | 1015 lbs. 460 kgs. | 1.95 lbs. .89 kgs. | — | — | — |
| RENAULT | 550 | 60° Vee | W | 12 | 134 | 180 | — | 550 h.p. 1800 r.p.m. | 600 h.p. 2000 r.p.m. | 1090 lbs. 495 kgs. | 1.81 lbs. .82 kgs. | — | — | Spur reduction gear |
| RENAULT | 700 | 60° Vee | W | 12 | 160 | 180 | 5.3/1 | — | 700 h.p. 1700 r.p.m. | 1375 lbs. 625 kgs. | 1.96 lbs. .89 kgs. | — | — | — |
| RENAULT | 700 | 60° Vee | W | 12 | 160 | 180 | — | — | 700 h.p. 1700 r.p.m. | 1485 lbs. 675 kgs. | 2.12 lbs. .95 kgs. | — | — | Spur reduction gear |
| SALMSON | A.D.9 | Radial | A | 9 | 70 | 86 | — | 40 h.p. 2000 r.p.m. | — | 165 lbs. 75 kgs. | 4.12 lbs. 1.88 kgs. | — | — | — |
| SALMSON | A.C.7 | Radial | A | 7 | 100 | 130 | — | 95 h.p. 1800 r.p.m. | — | 287 lbs. 130 kgs. | 3.02 lbs. 1.37 kgs. | — | — | — |
| SALMSON | A.C.9 | Radial | A | 9 | 100 | 130 | — | 120 h.p. 1800 r.p.m. | — | 374 lbs. 170 kgs. | 3.12 lbs. 1.41 kgs. | — | — | — |
| SALMSON | A.B.9 | Radial | A | 9 | 125 | 170 | — | 230 h.p. 1700 r.p.m. | — | 528 lbs. 240 kgs. | 2.29 lbs. 1.04 kgs. | — | — | — |
| SALMSON | A.B.18 | Radial | A | 18 | 125 | 170 | — | 460 h.p. 1700 r.p.m. | — | 1080 lbs. 490 kgs. | 2.35 lbs. .94 kgs. | — | — | — |
| SALMSON | C.M.9 | Radial | W | 9 | 125 | 170 | — | 260 h.p. 1650 r.p.m. | — | 550 lbs. 250 kgs. | 2.1 lbs. .96 kgs. | — | — | — |
| SALMSON | C.M.18 | Radial | W | 18 | 125 | 170 | — | 500 h.p. 1650 r.p.m. | — | 1012 lbs. 460 kgs. | 2.02 lbs. .92 kgs. | — | — | — |
| SAUDA | Cappa 18 | 60° Vee | W | 12 | 120 | 135 | — | 400 h.p. 1600 r.p.m. | — | 836 lbs. 380 kgs. | 2.09 lbs. .95 kgs. | — | — | 1.4/1 reduction gear |
| WALTER | 60 h.p. | Radial | A | 5 | 105 | 120 | — | 60 h.p. 1400 r.p.m. | 70 h.p. 1600 r.p.m. | 224 lbs. 102 kgs. | 3.2 lbs. 1.45 kgs. | .52 lbs. 235 grs. | .035 lbs. 16 grs. | — |
| WALTER | 85 h.p. | Radial | A | 7 | 105 | 120 | — | 85 h.p. 1400 r.p.m. | 90 h.p. 1460 r.p.m. | 275 lbs. 125 kgs. | 3.05 lbs. 1.39 kgs. | .52 lbs. 235 grs. | .035 lbs. 16 grs. | — |
| WALTER | 110 h.p. | Radial | A | 9 | 105 | 120 | — | 110 h.p. 1450 r.p.m. | 120 h.p. 1600 r.p.m. | 335 lbs. 152 kgs. | 2.79 lbs. 1.25 kgs. | .52 lbs. 235 grs. | .035 lbs. 16 grs. | — |

NOTE.—Weights do not include Oil or Water.

Weight per h.p. based on maximum h.p. where that figure is given.

Fuel per h.p. where given by makers in terms of volume has been transformed to a weight basis assuming S.G. of fuel to be 0.76.

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THE ROYAL AIR FORCE.

The London Gazette.

Dec. 7.

GENERAL DUTIES BRANCH.—The following Flg. Offs. are granted a perm. comm. in the rank stated (Nov. 1):—T. G. Bird, W. E. Purdin. The following Plt. Offs. are promoted to the rank of Flg. Offs.:—L. Dalton-Morris (Aug. 25); C. H. Roberts (Lt. A. and S. Hldrs., R.A.R.O.), E. E. Fallick (Oct. 14); J. R. Addams (Oct. 26); V. C. Taylor (Oct. 31).

Plt. Off. on probation B. J. Bushe-Caryesford is confirmed in rank (Nov. 22); Flt. Lt. J. S. Chick, M.C., A.F.C., is placed on half-pay, scale B, from Dec. 9 to 22 inclusive; Flt. Lt. T. S. James is transferred to the Stores Branch on probation with effect from Nov. 27, and with seniority as a Flt. Lt. of Jan. 1, 1923.

The following are transferred to the Reserve:—CLASS A: Flt. Lts.—H. Bligh, L. G. Paget, A.F.C., R. C. Preston, A.F.C. (Dec. 5). Flg. Offs.—F. H. Bugge, B. A. de Nevers, K. H. Holley, H. N. V. Le V. Noel, D.F.C., R. C. Pretty (Dec. 5); E. S. Brinsmead, F. Larman, F. B. Robinson (Dec. 9). CLASS B: Flg. Off.—C. C. Gissing, M.S.M. (Dec. 5). CLASS C: Flg. Off.—C. W. A. Scott (Dec. 9). Flg. Off. A. W. Daly is transferred to Reserve (Dec. 9).

The following Flg. Offs. resign their S.S. comms. (Dec. 8): R. E. H. Horn, G. H. Jennings-Bramly. Plt. Off. J. L. Chadwick relinquishes his S.S. comm. on account of ill-health (Dec. 8).

STORES BRANCH.—Wing Cdr. F. H. Kirby, V.C., C.B.E., D.C.M., is placed on retired list and is granted permission to retain rank of Group Capt. (Dec. 8).

ACCOUNTANT BRANCH.—The following are granted perm. comms as Plt. Offs. on probation, with effect from and with seniority of Dec. 4:—W. S. Calder, R. S. Sweet, H. D. Connor, H. C. Bakes, J. E. Gregson, B. Chadwell, D. A. K. Yiend, J. H. Glenn, C. M. Johnson.

MEDICAL BRANCH.—The following are granted S.S. comms. as Flg. Offs. for three years on the active list, with effect from and with seniority of Nov. 22:—R. A. W. Kerr, M.B., E. Thompson. G. E. Church, M.B., is granted a S.S. comm. as a Flg. Off., for three years on the active list, with effect from and seniority of Sept. 1, and is seconded for duty with the Royal Albert Edward Infirmary and Dispensary, Wigan, from that date. Flg. Off. B. W. Cross is promoted to the rank of Flt. Lt. (Dec. 4).

RESERVE OF AIR FORCE OFFICERS.—The following are granted comms. in the G.D. Branch as Flg. Offs. on probation (Dec. 7):—CLASS A: E. B. W. Bartlett, R. H. Lemon, H. Shaw. CLASS B: A. J. G. Anderson, W. G. Gunning.

Plt. Off. on probation R. D. Hambrook is confirmed in rank (Nov. 24); Flg. Off. M. J. Wyatt is transferred from Class C to Class B (Dec. 5); Flt. Lt. A. H. S. Baker, O.B.E., relinquishes his comm. on completion of service and is permitted to retain the rank of Sq. Ldr. (Dec. 5); Flt. Lt. W. P. Woodcock relinquishes his comm. on completion of service (Oct. 24) (substituted for the notification in Gazette of Nov. 23).

The following Flg. Offs. relinquish their comms on completion of service (Dec. 5):—G. S. Coggan, W. I. Hannon, L. W. Kitt, S. F. A. Welsh, G. W. Wilson, A.F.C. Flg. Off. H. J. Armitage relinquishes his comm. on account of ill-health, and is permitted to retain his rank (Dec. 8); Flg. Off. C. R. H. Trevor resigns his comm. (Dec. 7).

PRINCESS MARY'S R.A.F. NURSING SERVICE.—Matron Miss M. W. Campbell is placed on the retired list (Dec. 6); Miss P. K. Pearce resigns her appointment as sister (Sept. 11).

Appointments.

Week ending Dec. 13.

GENERAL DUTIES BRANCH.—Wing Commander A. W. Tedder, to Air Ministry, Directorate of Training, for Air Staff (Training) duties 1/1.

Squadron Leaders A. R. Arnold, D.S.C., D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 24/11. J. C. M. Lowe, to Air Ministry, Department of the Air Member for Supply and Research, 7/12. C. N. Lowe, M.C., D.F.C., to No. 6 Sqdn., Iraq, 24/11.

Flight Lieutenants E. J. D. Townesend, to H.Q., Iraq, 18/11. J. D. Breakey, D.F.C., to Home Aircraft Depot, Henlow, 2/12. G. M. Lawson, M.C., to H.Q., Egypt, 20/11. J. R. Cassidy, to No. 2 Arm. Car Coy. and Repair Section, Palestine, 25/11. D. S. Earp, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 24/11. L. Darvall, M.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10.

Flying Officers E. R. H. Coombes, to No. 15 Sqdn., Martlesham Heath, 15/12. H. Walker, to No. 24 Sqdn., Kenley, 15/12. G. J. Ross, to R.A.F. Depot, Egypt, 13/11. C. V. Lock, to No. 55 Sqdn., Iraq, 1/11. J. W. New, to No. 45 Sqdn., Iraq, 8/11. I. Hodgson, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 28/11. J. B. V. Glyde, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/10. B. I. J. Nimmo, to H.Q., Transjordan and Palestine, 1/11. A. I. MacMillan, to Station H.Q., Kenley, 1/12. J. St. C. Arbuthnot, to R.A.F. Training Base, Leuchars, 24/11. J. G. Franks, to R.A.F. Training Base, Leuchars, 3/12.

Pilot Officers E. H. Collinson, M.C., to No. 14 Sqdn., Palestine, 26/11.

MEDICAL BRANCH.—Flight Lieutenant A. Dickson, M.B., to No. 20 Sqdn., India, 26/10.

Flying Officers R. A. W. Kerr, M.B., and E. Thompson, to R.A.F. Hospital, Halton, 10/12.

STORES BRANCH.—Flying Officers R. O. Bamber, to No. 14 Sqdn., Palestine, instead of to H.Q., Transjordan and Palestine, as previously notified, 1/10. L. N. Sargent, to No. 5 Arm. Car. Coy., Iraq, 1/11.

ACCOUNTANT BRANCH.—Flying Officers H. A. Murton, to Stores Depot, Iraq, 1/11. R. C. Clayton, to No. 14 Sqdn., Palestine, 1/10. R. E. Barrett, to No. 2 Sqdn., Manston, 13/12.

Pilot Officers C. I. Dook, to No. 3 Stores, Depot, Milton, 16/12. W. S. Calder, R. S. Sweet, H. D. Connor, H. C. Bakes, J. E. Gregson, B. Chadwell, D. A. K. Yiend, J. H. Glenn, and C. M. Johnson, to H.Q., Cranwell, on appointment to Perm. Comms. (on probation), 4/12.

Fatal Accidents.

The Air Ministry regrets to announce that as the result of an accident at Martlesham Heath, Suffolk, to a Gamecock aeroplane of No. 22 Squadron, Martlesham Heath, on Dec. 7, Flg. Off. Gilbert Vernon Wheatley, the pilot of the aircraft, was killed.

At the inquest at Martlesham Aerodrome on Dec. 8 Sqdn. Ldr. T. H. England, D.S.C., A.F.C., said that certain alterations had been carried out on the machine and were completed the morning previous to the accident. Mr. Wheatley had taken the machine up after due inspection had been carried out and everything appeared to be in proper order. The machine was at the Station for experimental purposes. The alterations carried out upon it did not involve the stability of the wings. A man working in a garden said that part of the right wing came away.

A verdict of *accidental death* was returned.

The Air Ministry regrets to announce that as the result of an accident at Hawkinge, Kent, to a Grebe aeroplane of No. 25 Sqdn., Hawkinge, on Dec. 9, Flg. Off. John Harry Campbell Purvis, the pilot and sole occupant of the aircraft, was killed.

At the inquest at Folkestone on Dec. 10, Sgt. Pilot Stanford, who had been working with the dead officer in camera-gun practice, said that he thought Mr. Purvis believed he had more height in which to turn. Flg. Off. Walsh said that Mr. Purvis must have stalled the machine. In reply to the Coroner, he said that this was only the second machine of its kind that had caught fire since its adoption by the R.A.F. The jury returned a verdict of *accidental death*, and commented on the plucky action of Mr. Daniels, a farmer, who released the pilot from his seat and was burned in doing so.

Typhoid at Abu Sueir.

With reference to the rumour of a serious outbreak of typhoid fever at the R.A.F. Station at Abu Sueir, Egypt, THE AEROPLANE is informed by the Air Ministry that the outbreak originally consisted of ten cases. Two further cases developed subsequently and one death had occurred.

The cause is being very closely investigated by the Medical Branch of the R.A.F. No further cases have developed recently, and the epidemic is considered to be under complete control.

The R.A.F. Cadet College, Cranwell.

Air Chief Marshal Sir Hugh Trenchard, G.C.B., D.S.O., Chief of the Air Staff, inspected the passing-out term of Flight Cadets at the R.A.F. Cadet College, Cranwell, on Dec. 10.

In his address to the Cadets Sir Hugh Trenchard urged the Flight Cadets to specialise. He said that an officer who did not specialise would become a mere chauffeur. The aeroplane was the most terrible weapon in the world because it had a human brain in it. A keen brain and a thinking mind were needed to control such a weapon.

If those Cadets who were now passing-out specialised in the various branches of their profession they would make a great deal more of it than those now at the head had been able to do.

Air Commodore F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., Air Officer Commanding, R.A.F. Cranwell, in his Report said that there were 117 Flight Cadets under training. The total flying time for the last term had been 1,492 hours 55 minutes.

Cadets did not attach sufficient importance to engineering subjects. The Cadets who showed the most aptitude in all branches of educational training were the ex-aircraft apprentices who had served their time at the R.A.F. Schools of Technical Training.

The experiment of thesis writing on aeronautical subjects had proved signally successful. In English and history most of the Cadets had learned to express themselves well and with some judgment. In their weekly and terminal exercises on points of literature, history and strategy most of the Cadets had read up the subjects and interested themselves in them.

A higher standard of efficiency could be reached in Morse, and it was hoped that when the new buzzers were fixed in each hut the present standard would be raised.

Practical air pilotage had started with the Fourth Term this term. All Cadets had been fitted with parachutes.

The discipline had been good and the health of the Cadets continued to be excellent.

The College lost in efficiency owing to the absence of permanent buildings, but it was hoped that the work in connection with the new buildings would begin in the near future.

The standard of efficiency in physical training remained high. It was felt that more interest in boxing should be taken by the Cadets. The first XV. had won 65 per cent. of the Rugby Football matches played. The Association Football Captain and Colours were to be congratulated upon the success of their side during the season.

The passing-out Term numbered 32. The average flying time of these Cadets was 75 hours, of which 23 were solo on Service types.

The following Awards had been made:—

The Sword of Honour, presented to the best all-round Flight Cadet in the Senior Term—Flight Cadet J. Clarke.

The R. M. Groves Memorial Prize, for the best all-round pilot in the Senior Term—Flight Cadet J. Clarke.

The Abby Gerrard Fellowes Memorial Prize, for the Flight Cadet obtaining the highest total marks in Mathematics and Science—Flight Cadet J. Clarke.

The Air Ministry Prize in Humanistic subjects—Flight Cadet W. C. Cooper.

The Air Ministry Prize in Aeronautical Engineering—Flight Cadet J. Clarke.

The Air Officer Commanding recorded with deep regret the death of Flight Cadet D. G. Harcourt-Wood in a flying accident. This was the fourth fatal accident since the formation of the Cadet College in February, 1920, since when 279 Cadets passed out from the College.

Flight Cadet Clarke who has won the Sword of Honour, the R. M. Groves Memorial Prize, the Abby Gerrard Fellowes Memorial Prize and the Air Ministry Prize for Aeronautical Engineering was one of the three Aircraft Apprentices at Halton selected in December, 1924, to proceed to the R.A.F. Cadet College as a Flight Cadet. He was educated at Dalton Grammar School, Dumfries.

Flight Cadet Cooper, the winner of the Humanistic Prize, was one of the Aircraft Apprentices at Flowerdown selected in December, 1924, to proceed to the R.A.F. Cadet College as a Flight Cadet. He was educated at Falmouth Grammar School.

EMPIRE AIR DEFENCE.

A lecture on "The Royal Air Force Flight from Cairo to the Cape" was delivered by Wing-Cdr. C. W. H. Pulford, O.B.E., A.F.C., R.A.F., at the Royal United Service Institution on Dec. 8.

Most of Wing Cdr. Pulford's lecture will appear in THE AEROPLANE in the form of extracts from his official report, but he made one or two interesting statements which did not appear in the Report. He said that Fairey IID machines were chosen as the equipment of the Flight because of the recent good work they had done in the tropics at Singapore.

He also described the organisation which had been prepared for forced landings. The flight was divided into two sub-flights, and each machine was to look after its companion in the sub-flight. That is to say if a machine forced-landed its "mate" would land beside it if possible and render assistance. A rifle and 50 rounds of ammunition was issued to each machine for emergency use. Also emergency rations weighing 20 lbs. and sufficient for two men for ten days were issued to each machine.

Wing Cdr. Pulford also described the medical kit, the map equipment and the general procedure of the Flight on landing. After the lecture he showed some very interesting slides made from photographs. Some of these were taken from the air and gave a very clear impression of the varied country over which they flew and the thoroughly adequate temporary aerodromes prepared by the ground organisation.

Speaking for oneself as a member of the audience one would have enjoyed the discourse more if the lecturer had not balanced himself precariously on the precipitous edge of the platform throughout his lecture.

The Secretary of State for Air, who was in the chair, in introducing the Lecturer described the flight as a "romantic adventure,"—which epithet caused muffled sounds indicative of amusement among the typical R.U.S.I. audience, and blushes of embarrassment among the members of the Flight who were present.

Sir Samuel Hoare went on to say that the Air Staff was concentrating on mobility—the most important duty of an Air Force. Arrangements had been made for the R.A.F. to co-operate with the Air Forces of the Dominions and with civil aircraft in a number of flights across the Cape-Cairo and the Egypt-Australia routes during the next few years. These flights would be part of the normal training of the R.A.F. and the Dominions Air Forces.—C. M. MCA.

THE R.A.F. IN PARLIAMENT.

R.A.F. OPERATION IN IRAQ.

In the House of Commons on Dec. 8, in reply to Mr. Viant, the SECRETARY OF STATE FOR AIR said that one aeroplane had been written off charge as a result of enemy action during the period Jan. 1 to Nov. 18, 1926. This aeroplane was carrying out a reconnaissance in the Sulamane district of Iraq on June 14 to locate followers of the rebel Kurdish chieftain, Sheik Mahmud. The aeroplane had a forced landing and was seized, looted and destroyed. The occupants were held in captivity for some months but were eventually released.

FLYING ACCIDENTS IN THE ROYAL AIR FORCE.

In the House of Commons on Dec. 9, Mr. HORE-BELISHA asked the PRIME MINISTER whether he would allot a day before the House rose to discuss the position created by the continued sequence of accidents in the Air Force. The PRIME MINISTER said that he could not give time for such a discussion. Though he deeply deplored such accidents he was satisfied that every possible precaution had been and would continue to be taken to safeguard the lives of the R.A.F. personnel. Mr. HORE-BELISHA referred to the accident at Hawking and said that these accidents caused grave anxiety in the country.

CAPT. GARRO-JONES asked the SECRETARY OF STATE FOR AIR to describe the system of investigation into Service flying accidents. SIR PHILIP

SASSOON (Under-Secretary of State for Air) said that the routine procedure was laid down in King's Regulations, paragraphs 1312, 1313, from which it would be seen that a Court of Inquiry was held on all serious accidents.

The reports of all Courts of Inquiry were scrutinised in detail at the Air Ministry with the utmost care. An entirely independent investigation was also made into every serious accident by the Inspector of Accidents of the Air Ministry who rendered his reports direct to the Secretary of State. In the light of his report and that of the Service Court of Inquiry all possible steps were taken to prevent a recurrence.

In addition the details of all flying accidents and forced landings were summarised every six months and investigated statistically with a view to elucidating recurring causes of accidents and other statistical inquiries on special aspects of the problem, such as engine failures, were constantly undertaken.

The present system had been in force, subject to minor changes, since the inception of the R.A.F. He was not clear how the present system of investigation could be strengthened, but the question of the prevention of accidents was one which engaged constantly the attention of the Secretary of State and of the Air Council. If it was found that anything more could be done than was being done at present, whether by way of strengthening the investigation or otherwise to prevent crashes, the hon. and gallant Member could be assured that it would be done.

CAPT. GARRO-JONES thought that the system under which only one officer made a supplementary inquiry for the Air Ministry could be strengthened. He thought that two or three officers could join in these investigations. SIR PHILIP SASSOON said that there were two separate inquiries composed of a sufficient number of people to do the work efficiently.

MR. HORE-BELISHA said that the French Air Force was three times greater than our Air Force and yet we had many more accidents than they did. SIR PHILIP SASSOON said that the French Air Force was not three times the size of ours. It was not double the size. With regard to the number of French air accidents he believed the figures published in the papers were ludicrously under-estimated.

THE R.A.F. CLUB.

The Royal Air Force Club will be closed for the Christmas Holidays from midnight on Christmas Day until 5.0 p.m. on Tuesday, Dec. 28, except in so far as affects bedroom accommodation (with breakfast only) to Residents and Members who have engaged bedrooms prior to noon on Christmas Day.

THE ROYAL AERO CLUB.

Christmas Closing.—The House Committee of the Royal Aero Club has decided that on Christmas Day, Sunday and Boxing Day, the 25th, 26th and 27th of December, luncheons, dinners and teas shall not be served and the Bar shall be closed. Breakfast only shall be served to Members staying in the Club.

THE R.A.A.F. PACIFIC FLIGHT.

On Dec. 7 Group Captain Williams, D.S.O., O.B.E., Flt. Lt. I. E. McIntyre, C.B.E., A.F.C., and F.S. Trist, R.A.A.F., arrived back in Melbourne after carrying out a flight over the Pacific Islands on a D.H.50 seaplane (240 h.p. Siddeley Puma engine).

SIR SAMUEL HOARE ON ACCIDENTS.

In a speech at Birmingham on behalf of the formation of a Warwickshire Squadron of the Auxiliary Air Force, the Secretary of State for Air disagreed from the argument that flying would be more dangerous for non-regular personnel because they would not have the intensified training of regular officers. He said that if this objection were a valid one it would be very serious. All methods of quick transport had big risks.

Although they were not likely to discover any panacea against flying accidents, every possible precaution was taken and the standard of training, inspection and supervision was far higher in this country than in any other country in the world. The reports of the careful and minute analysis of accidents and their causes made by the Service and civilian inquiries were sent to him and the recommendations made in them were not ignored. The result of these inquiries showed that the accidents were spread fairly evenly over every type of machine and every Air Force station.

In proportion to the amount of time spent in flying the proportion of fatal accidents tended to decrease. Although a deplorable number of accidents had occurred during the last few weeks, when the amount of flying was taken into account, it had been the second best year they had had.

AIR AFFAIRS IN PARLIAMENT.

AIR MINISTRY OFFICIALS (PROSECUTION)?

In the House of Commons on Dec. 8, in reply to a question by COL. DAY about "two officers of the R.A.F. who were convicted at the Old Bailey," the SECRETARY OF STATE FOR AIR said that his attention had been drawn to the case of fraud to which the hon. and gallant Member referred. The facts were not as stated in his question. The Jury's rider had no reference to the administration of Air Force accounts, which were in no way in question. The two officers concerned were not "R.A.F. officers," but temporary officials serving the Air Ministry in a civil capacity and they were neither charged with nor convicted of fraudulent conversion. The Jury's rider censured them for conduct disclosed in the evidence which they gave as witnesses for the prosecution, and the action to be taken by his Department was at present under consideration.

THE AIRCRAFT OF THE WORLD.

["All the World's Aircraft." Compiled by C. G. Grey and Leonard Bridgman. 459 plus 58 pp. Sampson Low, Marston and Co., Ltd., 100 Southwark Street, London, S.E.1. £2 2s. net.]

The 1926-27 edition of *All the World's Aircraft* has now been on sale for some weeks, and one takes the liberty, as Editor, part compiler, and part proprietor, of commending it to the readers of *THE AEROPLANE* as being worthy of their attention. One is confirmed in this belief by the fact that it is a Service issue to certain officials of the Air Ministry, and one believes that it is also issued by the Air Ministry to the messes of all R.A.F. units, for the education of the young and the refreshment of the old. Also there is the fact that the biggest buyers of the book are the Japanese Government, who consider it of sufficient importance to be used as the standard work of reference on aeronautics by the Japanese Navy and Army.

For the benefit of those who have not yet met *All the World's Aircraft* one would point out that it consists of three sections:—

(A) The Historical Section, which records year by year the progress of militant and civil aviation in each country in the World and gives, when obtainable, the precise organisation of the Flying Services of each country. This section also contains pictures of the officers, men of each country and of the matériel used by them, so that those who take the Science of War seriously may have an opportunity of studying the physical characteristics and bearing and equipment of the men against whom or alongside whom they may have to fight in the future.

The Historical Section gives also the names and addresses of the chiefs of aeronautical departments in the different countries and of the leading air organisations and clubs and societies, and of all the publications which deal with aeronautics.

Section B deals with Aeroplanes. It includes practically every type of aeroplane built in each country during the twelve months preceding the production of the book. In the 1926-27 issue just over 600 different types of aeroplanes are described, and there are 475 photographs of aeroplanes and 100 line drawings which give the general arrangement of the more important types, and of some types of which no photographs are obtainable.

All the aeroplanes described or illustrated in previous editions of *All the World's Aircraft* and no longer in use in 1926 have been eliminated from the book, so that the whole 600 types described are either entirely new or were actually in use at the time of going to press. This section in the latest issue is particularly interesting because it includes all the so-called "light" aeroplanes which are becoming so prominent in all countries. All of these which appeared up to within a few weeks of the production of the book are fully described and illustrated.

Section C is concerned with Aero-Engines. This is naturally smaller than the Aeroplane Section because one type of

engine is used in many different types of aeroplanes. But it includes 85 different aero-engines, all of which are in current use, and there are 132 illustrations of these engines in their different aspects. Among them will be found the recent engines which have been specially developed for light aeroplanes, such as the A.D.C. Cirrus, the Armstrong-Siddeley Genet, the Bristol Cherub and the A.B.C. Scorpion.

Section D is concerned with airships. As there has been practically nothing done in the development of airships during 1925-26 this section only consists of a few pages, for, as in dealing with aeroplanes and engines, all types not in current use in 1926 have been eliminated.

Those who are particularly interested in the development of air transport will find in the Historical Section a full account of the development of air lines in each country, and at the end of the section will be found a complete list of all the air lines of the World. Also there is a list of the great flights of the previous twelve months and a list of the essential air records for speed, height, duration, etc.

One cannot very well criticise the book oneself, but one has set forth above the actual facts about what it contains. One does not claim that the book is free from error. For example, owing to a lamentable oversight the sub-section pertaining to Chile has been entirely omitted from the Historical Section.

The explanation is that when setting about compiling the book each year letters are sent to the embassies or legations of foreign countries in London, as well as to the offices of the Flying Services in the capitals of each country itself, enclosing a copy of the section devoted to that country in the previous issue and asking that its accuracy may be checked and that information may be supplied about further developments. Practically every country in the World which owns any aircraft, or sets up to have a Flying Service, sent the desired information—with the exception of Chile. Consequently the Chilean Section was held back till the very moment of going to press in the hope that official information might be supplied. And unfortunately, in the hurry of passing the last pages of proofs, we who compile the book forgot to put in the information, accurate though out of date, which had appeared in the previous issue. However, those who have copies of the previous issue of *All the World's Aircraft* can refer back for the essential facts concerning aviation in Chile.

Despite this omission those who have criticised *All the World's Aircraft* in numerous newspapers and magazines in this country and abroad have been very kind to the book and have been pleased to intimate that it is practically indispensable to anybody who wishes to be well-informed on aeronautical matters. One takes this opportunity of thanking them one and all for their expressions of good will, and one assures them the suggestions which they have made for the further improvement of future issues have been duly noted for necessary action when compiling the next issue.

C. G. G.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Dec. 12.

During the past week the fog was responsible for three blank days. Total flying time 21 hrs. 20 mins.

The following members had flying instruction:—D. L. Stally, A. J. Richardson, H. S. Spooner, H. Solomon, J. A. Simson, J. G. Crammond, E. A. Lingard, J. J. Hofer, Miss Spooner, R. Malcolm, C. G. Miesagies, G. C. Bonner, M. H. Samuelson, E. J. B. King, Miss Fletcher.

The following members flew solo:—D. P. Esler, O. J. Tapper, H. S. Spooner, J. A. R. Stevenson, G. C. Bonner, D. Kittel, G. Terrell, N. Jones, Lady Bailey, W. L. Macleod, W. Hay, G. H. Craig, S. O. Bradshaw, C. E. Murrell.

During the week W. L. Macleod and H. Spooner passed the tests for their Aviators' Certificates.

The following members were given joy-rides:—Mrs. Matthews, E. R. Wilson, Miss Wilson.

The Club has arranged to take over a D.H. Moth to replace G-EBNP which was recently crashed.

The Lancashire Aero Club.

Report for week ending Dec. 11.

Total flying time for week, 12 hrs. 50 mins., made up as follows:—Dual with Mr. Brown: Messrs. Wade 1 hr. 5 mins., Dickinson 1 hr., Twemlow 45 mins., Stern 40 mins., Miss Brown 45 mins., Messrs. Wilson and McNair 35 mins. each, Shiers 30 mins., Parker 25 mins., Miss Emery 25 mins., Messrs. Slater and Newton 20 mins. each, Moore and Prince 10 mins. each, Costa 15 mins.

Solo: Messrs. Twemlow 1 hr. 15 mins., Lacayo 50 mins., Leeming 40 mins., Costa 35 mins., Goodfellow 15 mins.

Test flights: 1 hr. 15 mins.

The nature of the weather may be gathered from the fact that not a single joy-ride has been given during the week. Incidentally, the said atmospheric conditions have lost the Club £10, for Mr. Blagden, who has been waiting patiently for 10 days for a gap in the clouds to enable him to do his "A" Licence height test, has now left the Manchester district without being able to carry it out.

The following extract from a letter written by Mr. Stack at Malta may be of general interest:—"... we have managed to find Malta after leaping off Sicily into space, so to speak. We have had the most unfortunate weather—rain, gales, thunder and mist down the Rhône

valley—anything, in fact, but a following wind and fine days. We have been held up everywhere, but are slowly pushing on. The two best trips we have made so far have been from Marseilles to Pisa, 300 miles in 4½ hrs., and then from Capua (Naples) to Malta, 470 miles in 6½ hrs. Our next leap off will be to cross the spot of neat water to the African coast.

"We had rather a rough trip from Paris to Lyon. When we left Paris the weather was not too bad, but a strong head wind was blowing and by the time we reached Dijon we were flying through rain and thunderstorms. The wind got up to nearly half a gale and we had to fly at about 300 ft. in order to follow the river. Eventually, when about 60 kms. from Lyon it became so dark that we could not see our maps and had to just follow the river.

"After a time the lights of Lyon showed up, but we could not see anything in the nature of aerodrome lights. Luckily I knew the position of the aerodrome and managed to find it, but could only make out the roofs of the hangars and a large white landing T. We made landings of sorts and then got out and walked to the hangars as it was too dangerous to taxi our kites in owing to the darkness. The staff rushed out in cars and said they thought we would have crashed and explained that they had no lights as all their electric cables had been blown down by the storm of the day before." (Apparently the aerodrome manager forgot that there are such things as petrol flares.)

Since writing the foregoing both Stack and Leete have safely crossed the 250-mile "spot of neat water" referred to and have reached Cairo, after covering well over 2,000 miles from their starting point, the last 1,000 miles having taken them only 4 days.

Meanwhile all (except the weather, of course) is in readiness for Mr. Leeming's mountaineering flight, in connection with which the following rude verse has been received from some low fellow who seeks the cloak of anonymity:—

Our Leeming had an Avro with great big wheels on,
And a very special engine that was Avro's joy and pride,
And daily he would take it up
And put it down and shake it up
And land it on a handkerchief till all the papers cried:—
"This is John Leeming—Attaboy!"
"This is John Leeming—Have a care!"
"There isn't any tellin',"
"He might land upon Helvellyn,
"So look out! take cover! beware!!"

The Yorkshire Aeroplane Club.

Report for week ending Dec. 10.

Total flying time 5 hrs. 35 mins., made up as follows:—
Two hrs. 15 mins. dual and 3 hrs. 20 mins. solo.

Messrs. Mann, Marshall, Oglesby and Watson had dual; while Messrs. Dawson, Lax, Mann and Watson went solo.

On Saturday, Dec. 4, we were favoured with a really fine day, with the result that two of our members, Messrs. Lax and Watson, under the watchful eye of Mr. Loton, successfully passed the flying tests for their "A" Licence.

In the course of the altitude test Mr. Watson reached 6,500 ft., but Mr. Lax, to make doubly sure, was not content to come down until the 7,000 mark had been attained. At the conclusion of each test one saw Mr. Loton, complete with foot rule, taking precise measurements from the fixed point, and his mind was still somewhat uneasy as to whether one of the turning points (a haystack in this case) had been accurately rounded on each of the figure-of-eight turns. In future, if we supplied him with a theodolite and could procure the services of someone willing to float a captive balloon immediately above the aforesaid haystack it would save him a lot of worry and incidentally a stiff neck!!

As the aerodrome was again enveloped in a thick fog during the whole of Sunday, it was impossible for any of the others to attempt the tests, so that they will now have to be content to postpone them until after Christmas, when Mr. Loton will be back.

The Club will close down for Christmas on Tuesday evening, Dec. 21, and will re-open on Wednesday, Jan. 5, 1927.—R. O. L.

The Midland Aero Club.

Report for week ending Dec. 4.

Total flying time 9 hrs. 40 mins.

The following made solo flights:—J. Brinton, H. J. Willis, G. V. Perry, R. L. Jackson, E. L. Brighton.

The following were given dual instruction:—C. Fellows, O. L. Richards, S. H. Smith.

On Sunday Mr. J. Brinton did the qualifying tests for his Certificate.

On Monday Mr. McDonough flew LW to Hampton Lucy to give an exhibition of flying over the estate of Sir Henry Fairfax Lucy, Bart., and a Meet of the Warwickshire Hounds.

Tests occupied 30 mins.

Report for week ending Dec. 11.

Total flying time 5 hrs. 5 mins.

The following made solo flights:—J. Brinton, G. V. Perry, E. J. Brighton, C. L. Knox, R. L. Jackson.

Mr. O. L. Richards was given dual instruction.

Fog throughout the week restricted flying.

The first Midland Aero Club Dance was held at the Palace Ball-room, Erdington, on Thursday. It was a most enjoyable affair.

The Hampshire Aeroplane Club.

Report for week ending Dec. 9.

Total flying time 8 hrs. 41 mins. Passenger flying 5 hrs. 25 mins. Solo flying 3 hrs. 16 mins.

The following had instruction:—Lt. Graham, R.N., 20 mins., Lt. Heinman, R.N., 50 mins., Messrs. Sheppard 15 mins., Kerry 25 mins., Southcliffe 50 mins., Molony 25 mins., Stokes 8 mins., Rumble 12 mins., Cooper 50 mins., Keeping 50 mins., Vaughan 20 mins.

The following flew solo:—Messrs. Keeping 25 mins., Rumble 25 mins., Jones 15 mins., Perfect 46 mins., Simmonds 5 mins., Bowen 5 mins., Fry 5 mins., Flg. Off. Mellor 35 mins., Lt. Graham 35 mins.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Dec. 5.

Total flying time 6 hrs. 15 mins. Dual 6 hrs. Tests 15 mins.

The following had instruction:—Messrs. Turnbull, Wilson, Ramussen, Stawart, Wardill, Shaw, and A. Bell.

Dr. Dixon flew with Mr. Parkinson for advanced dual instruction.

Report for week ending Dec. 12.

Total flying time 13 hrs. 30 mins. Dual 9 hrs. 15 mins. Solo 3 hrs. 15 mins. Passenger flights 1 hr.

Members who flew with Mr. Parkinson under instruction:—Messrs. Stawart, Mathews, J. M. Kennedy, Irving, Wardill, Turnbull, Bruce, Bell.

The following members flew solo:—Mr. Irving, Mr. Mathews.

Pilot members with passengers as under:—Dr. Dixon with Mrs. Watt and Mr. Catcheside, Mr. R. N. Thompson with Miss Willis, Mr. C. Thompson with Mrs. Heslop.

Mr. Parkinson took the following for joy-rides:—Miss Ward, Miss Bayliss, Miss Tiley, Mr. Fry, and Mr. Hay.

Flying was only possible on three days during the week, strong winds prevailing almost all the week. Only one machine is on service at present. On two days, when it was too windy for solo work or landings, Mr. Parkinson took Mr. Irving for instruction in short cross-country flights.

A South African Club.

THE JOHANNESBURG LIGHT AEROPLANE CLUB.

Early in December a flying club was formed in Johannesburg to be known as the Johannesburg Light Aeroplane Club. It is to be organised on the lines of the English and Australian Flying Clubs, but so far no details as to possible equipment and the question of Government support are available.

WITH BANJULELE TO BAGHDAD.

Mr. T. N. Stack and Mr. B. S. Leete, who are attempting to fly to India on two D.H. Moths (80 h.p. Cirrus Mk. II engines), arrived in Cairo on Dec. 12.

A Reuter message in *The Manchester Guardian* states:—

Capt. T. N. Stack and Mr. B. S. Leete, who are endeavouring to fly in Moth aeroplanes from London to India, arrived at the Heliopolis aerodrome from Badir (Tripoli) yesterday morning after an uneventful flight with a following wind. The airmen flew along the coast from Badir and then followed the line of cultivated land. They are leaving for Baghdad to-morrow morning.

In the course of their flight from Malta to Egypt Mr. Stack and Mr. Leete flew across more than 200 miles of sea. This must be a non-stop record for light aeroplanes. And anyhow it is a very fine and plucky performance.

COMMERCIAL AERONAUTICS.**The London Terminal Aerodrome.**

ANALYSIS OF FIGURES FOR THE PAST WEEK

Trips per Day:—Monday, 3; Tuesday, 5; Wednesday, 11; Thursday, 9; Friday, 2; Saturday, 10; Sunday, 0.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 18, passengers 90, freight 7 tons.

AIR UNION:

Paris—London: Machines 17, passengers 9, freight 3½ tons

K.L.M.:

Amsterdam—Rotterdam—London: Machines 8, passengers 14, freight 2 tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 7, passengers 10

PRIVATE:

Machines 0, passengers 0.

Total number of trips by British Machines, 18, carrying 90 passengers. Foreign Machines, 22, carrying 33 passengers

Comparative Figures:

Week ending Dec. 12:

Machines, 40; Passengers, 123; Crews, 47; Total personnel, 170.

Corresponding week, 1925:

Machines, 63; Passengers, 147; Crews, 71; Total personnel, 214

Corresponding week, 1924:

Machines, 31; Passengers, 83; Crews, 37; Total personnel, 120.

Corresponding week, 1923:

Machines, 43; Passengers, 45; Crews, 73; Total personnel, 118.

Corresponding week, 1922:

Machines, 36; Passengers, 123; Crews, 70; Total personnel, 193.

Corresponding week, 1921:

Machines, 11; Passengers, 20; Crews, 19; Total personnel, 39

Corresponding week, 1920:

Machines, 11; Passengers, 14; Crews, 12; Total personnel, 26.

Croydon Notes.

The De Havilland Hercules has now been at Croydon over a week and has run on service once. On Thursday of last week she set out for Paris piloted by Mr. F. L. Barnard with nine passengers. Thick fog however prevailed in Paris and she was forced down at Beauvais whence she returned the next day to Croydon.

This particular machine is due to leave Croydon for Cairo via Malta on Saturday. Mr. Wolley Dod and Mr. Dudley Travers will be the pilots. A stop will be made in Malta for a day or so to wait for the second machine, after which the two machines will fly together to Cairo.

The Argosy, piloted by Mr. O. P. Jones, last Wednesday was forced to land at Pluckley when flying from Paris to London with 12 passengers. Some explanation may be welcomed as to why (as someone at Croydon said) she did not stay in the air with three engines and four pilots (for among the passengers were Lady Bailey, Lt. Col. Henderson, and Mr. Frank Courtney). Mr. Dismore, the Secretary and *Chargé d'Affaires* of Imperial Airways, said that when the machine was over Cranbrook a tappet rod on one engine broke. The guiding principle with three-engined machines is that if one engine goes dead a landing must be made at the nearest convenient aerodrome.

Mr. Jones promptly made for Lympne, but as the oil pressure on another engine appeared to be low, and as he was near to the old aerodrome at Pluckley, he landed there as a precautionary measure. The passengers continued their journey by train and reached London about 8 p.m. instead of by 4 p.m.

In such a case Imperial Airways naturally refunds to each passenger the cost of conveyance by surface transport to his or her destination, and the proportion of the air-fare unflown. One thinks that it would be better to refund a sum which would bring the whole fare down to the surface rate, for the passenger gains no advantage in time and suffers decided disadvantages and discomfort. Moreover, the passenger has the added inconvenience of complicated Customs formalities.

Mr. Jones replaced the tappet rod on the engine from spares carried on the machine and flew the machine to Croydon without external assistance on the next day.

To the Aerodrome Hotel on Saturday morning a light-weight pilot entered with a large Airdale-type hound tugging on a lead. Mr. Jerry Shaw of Shell fame remarked "Ah. There's Mr. Dog taking his Armstrong for a walk."

The new buildings are growing very slowly, in fact so slowly that it is now suggested that the work is being done by Sir Samuel Hoare and Sir Philip Sassoon personally and unaided in their spare time. One cannot vouch for the truth of this suggestion, as one has not actually caught either of these eminent politicians at the job.—G. D.

Royal Aero Club Notes.

An official notice from the Royal Aero Club shows in the latest list of Aviators' Certificates granted "8058 Oliver Edwin Simmonds 28th November 1926." Mr. Simmonds is the Secretary of the Hampshire Aeroplane Club, and thus acquires the distinction of being the first secretary of any of the Light Aeroplane Clubs to become a qualified aviator with an "A" Certificate.

Mr. Simmonds is on the design staff of the Supermarine Works at Woolston, and prior to joining that firm was at the Royal Aircraft Establishment at Farnborough, where he was secretary of the R.A.E. Aero Club and was largely responsible for the production of the R.A.E. "Hurricane" which flew so well at Lympne in 1925 and 1926.

Incidentally, among the new members elected to the Royal

Aero Club one finds the names of Group Captain Edward Featherstone Briggs (D.S.O., O.B.E., R.A.F.) and Robert Arthur Chalmers. It is pleasing to see that the Aero Club is being discovered by the pioneers of aviation, for Group Captain Briggs as an Engineer-Lieutenant R.N. was one of the first batch of naval aviators at Eastchurch after the historic first four, and Mr. Chalmers was a member of the Dutheil-Chalmers partnership who were building aero-engines in 1908.

Another new member is Lord Ossulston, elder son of the Earl Tankerville, who was a pilot in the R.N.A.S. during the War and has lately developed into an enthusiastic pilot of light aeroplanes.

PERSONAL NOTICES.

DEATHS.

MAUDE.—On Dec. 11, at Hong-Kong, accidentally killed while shooting, Maurice Anthony Maude, Lt., R.N., and Flg. Off., R.A.F.

Mr. Maude was detached from the Royal Navy for duty with the R.A.F. in June, 1924. After a course of flying instruction at No. 1 F.T.S., Netheravon, he was posted to No. 403 Flight, Mediterranean. In February, 1926, he was transferred to No. 401 (Fleet Fighter) Flight in H.M.S. *Vindictive*, China Station.

PURVIS.—On Dec. 9, at Hawkinge, Kent, as the result of a flying accident, John Harry Campbell Purvis, Flg. Off., No. 25 (Fighter) Sqdn., R.A.F., elder son of Major R. W. Purvis.

Mr. Purvis joined the R.A.F. with a S.S. commission on Jan. 17, 1925, and was posted to No. 2 F.T.S., Digby, for a course of flying instruction. He was posted to No. 25 Sqdn. in January, 1926, and promoted to the rank of Flg. Off. in October, 1926.

WHEATLEY.—On Dec. 7, at Martlesham, Suffolk, as the result of a flying accident, Gilbert Vernon Wheatley, Flg. Off., No. 22 (Bombing) Sqdn., R.A.F.

Mr. Wheatley rejoined the R.A.F. with a S.S. comm. in June, 1921, and underwent a course of instruction at the School of T.T., Manston. In September, 1921, he was posted to No. 5 Sqdn., in India, and remained there until February, 1926, when he was posted to No. 22 Sqdn., at Martlesham Heath.

MARRIAGE.

RYDE—BARWICK.—On Nov. 5, Alec Ryde, R.A.F., to Joyce, only daughter of Capt. Barwick, R.I.M. (Retd.).

BIRTHS.

ALSTON.—On Dec. 13, to Margery, wife of Cedric R. Alston, late Capt., R.A.F., at Oak House, The Mount, Sydenham—a son.

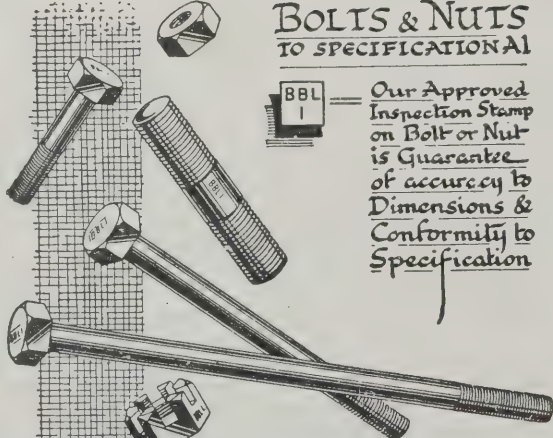
RITSON.—On Dec. 5, at 12, Herne Hill, S.E., to Hilda (née Shrapnell), wife of Capt. Leonard Ritson, Reserve of Air Force Officers—a daughter.

TROLLOPE.—On Dec. 6, at The Cottage, Banstead, to Molly (née Field), wife of John L. Trollope—a daughter.

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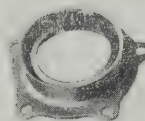
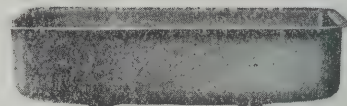
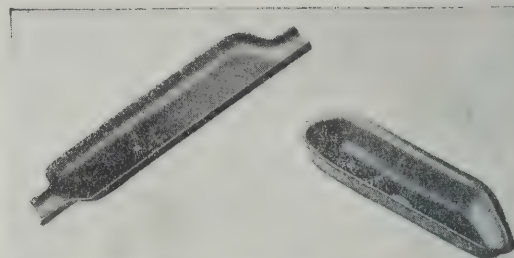
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Inter-Club Members' Scratch Race and Bomb-Dropping event, at the Newcastle Aero Club's Meeting—all won on PRATTS.

YORK AERO CHALLENGE CUP

won at the Leeds Aerial Pageant by Mr. J. Parkinson, flying a D.H. Moth 27 60 h.p. "Cirrus" engine, entered in Pilot Instructors' Race—on PRATTS.

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BOULTON AND PAUL, LIMITED.

At a time when new and original methods of aircraft construction, more especially in metal, are attracting the attention of designers throughout the world, it will not be amiss to give some brief particulars of the progress in metal construction which has taken place in this country during the past few years.

It can be said of at least one firm, namely, Boulton and Paul Limited of Norwich, that they have applied themselves diligently and consistently to the problem of metal aeroplane design and, although their work is not widely known, there is evidence that the results which they have already achieved are capable of very widespread application.

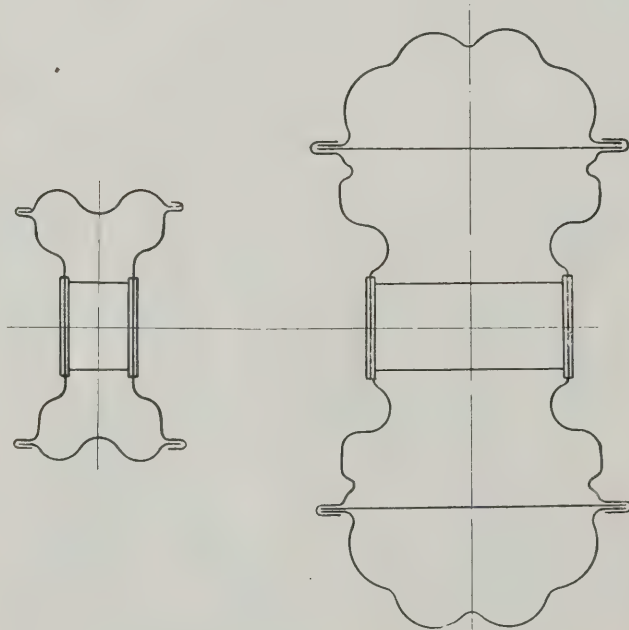
The Boulton and Paul P.10 aeroplane, which appeared at the 1919 Paris exhibition as the first complete example of modern all-metal construction, served to demonstrate what results could be expected from the use of high-tensile steels and, encouraged by this achievement, Boulton and Paul Ltd. decided to abandon entirely the construction of wooden machines and have since devoted the whole of their energies to metal construction.

The basic features of the structural members in use to-day are the same as those of the P.10 and are the subjects of patents covering the design of that machine. On the other hand, the exact form of components such as spar flanges and webs, strut booms, etc., has undergone considerable modification, dictated by considerations of strength, ease of manufacture, availability of new and improved steels and adaptability to a wide range of sizes. To illustrate this point we show the original P.10 spar contrasted with a modern Boulton and Paul spar designed for a much larger machine. Throughout the development of the Boulton and Paul system of construction the importance of its adaptability to rapid and

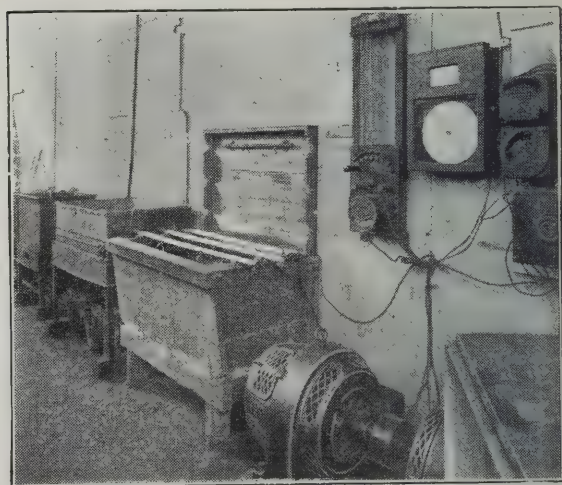
machines of any other design is a very simple matter, requiring a negligible outlay for special plant. Plates for the attachment of fittings, stamped in high-tensile steel, are supplied in three standard widths, covering all likely requirements, and a similar amount of care has been devoted to the standardisation of strut, longeron and other sections. The difficulty of producing tubes in high-tensile steel has been overcome by the design of a special "Locked joint" tube. This is formed up on the drawbench from flat strip, the edges of the strip being interlocked inside the contour of the tube. The locked joint tubing can, in common with other sections, be supplied in any length up to 150 feet, and can be produced satisfactorily in high-tensile nickel-chrome or stainless steels or in light alloys and in very small thickness/diameter ratios, in all gauges from 30 s.w.g. upwards. A much greater uniformity of thickness can be guaranteed than would be possible with solid drawn tubing.

The heat-treatment of all Boulton and Paul sections is carried out after forming, by means of a special continuous heat-treatment plant designed for the purpose. This not only enables the strip to be worked in the most suitable condition, but also gives an absolute uniformity of treatment throughout the length of a member, the lack of which is often conspicuous where the strip has had to be heat-treated in coils before forming. No heat-treatment whatever is required after materials have left the Boulton and Paul Works other than the ordinary salt bath treatment for light alloys and the re-tempering of any high tensile steel fittings which it is necessary to bend. Here again the aeroplane builder is relieved of a large amount of trouble and expense.

The problem of protection from corrosion is one which caused a certain amount of anxiety in the early days of metal construction, and it has been the subject of very thorough investigation. A large amount of data has been accumulated, and Boulton and Paul are to-day able to supply suitable composition coatings for any class of work, which have been thoroughly tested over prolonged periods by the most drastic methods. The latter include heat and bend tests, immersion in hot oil, petrol, acid and alkaline solutions, alternate immersions in sea water for six months, dope corrosion and similar tests. For the protective treatment of aluminium and its alloys, the process of anodic oxidation, developed at the R.A.E., has been adopted.



cheap quantity production has been kept well in view, and sufficient experience in the design of members has now been accumulated to enable a large number of sections to be standardised which, while providing the widest possible latitude in the design of members, at the same time strictly limit the number of tools and operations required for assembly and erection. In the case of spars, for example, three web section forms and six flange section forms have been standardised and suitable tools made for producing them from strips of varying thickness. By using various combinations of these forms and various gauges of material, a range of over two thousand spars is available, covering the requirements of aeroplanes between two thousand and twenty thousand pounds total weight. All the spars have common dimensions associated with joining and rivetting, and as there are only three web sizes, three sets of tools only are required in the assembly of the complete range. It will at once be appreciated that the use of Boulton and Paul sections in



Anodic Oxidisation Plant at Boulton and Paul's Works.

In the development of the constructional side of aeroplane design, the aerodynamical aspect has not been neglected. The Boulton and Paul works are equipped with a 4-ft. wind channel, the intelligent use of which is witnessed by the remarkable advances shown in their machines in aerodynamic efficiency and, more particularly, control. Our readers will remember the noteworthy performance of the Boulton and Paul "Bourges," which may be said to have set a new standard of controllability for large machines. The Boulton and Paul patent control balance, which is the outcome of more recent work, constitutes possibly an even greater advance. It certainly enables machines to be flown at most extraordinary angles of attack under complete control and, in combination with suitable tail surfaces, without any sign of a sudden stall: distinctly a step in the right direction.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

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THE AEROPLANE—DEC. 22, 1925.

LIGHTER THAN AIR.

THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. G. G.

Vol. XXXI. No. 25.

SIXPENCE WEEKLY.

Registered at the G.P.O.
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ON CHRISTMAS AND AIRSHIPS.

There is no possible use in trying to induce anyone to read anything serious at Christmas time. To paraphrase Sir Samuel Hoare, everybody is feeling Christmas-minded. Nobody can be bothered during this current week with anything more serious than buying or selling Christmas presents.

Also, one can never feel inspired to write anything really serious about airships. There is something inexpressibly funny about an airship, and there always has been, ever since they first appeared and were commonly called sausages. And they are made all the funnier because the airship enthusiasts take themselves so horribly seriously. So let us be merely frivolous.

There are few forms of amusement which are more thoroughly satisfying than pulling the leg of a person who takes himself or his pet hobby too seriously and is lacking in a sense of humour. One cannot pull the legs of the airships themselves, because they have not got any, poor things, being a species of levitated worm. But there are no legs in the World which are quite so easy to pull as those of the airship enthusiasts.

This fact is a zoological and psychological curiosity. One would hardly expect people connected with gassy lighter-than-air things like airships to be heavy-witted. One would rather suspect them of levity. On the other hand, one would rather expect people on the heavier-than-air side of aeronautics, who have to do with solid chunks of timber and metal in aeroplanes, to be a bit on the stolid side. Yet one finds that the lighter-than-air people are ever so much heavier than the heavier-than-air people, whereas the heavier-than-air people, even in the earliest pioneering days when, like

the traditional hyena, they had nothing to laugh at, were incurably light-hearted and quick-witted.

One imagines that the psychological reason is that airships are so slow in their movements, fore-and-aft and vertically and sideways, that there is never any need to think very quickly about them and so their crews are apt to become thoughtful and introspective, even though they may not become philosophic. On the other hand the aeroplane people have to think quickly or else they cease to think at all. And, that being so, a sense of humour is essential.

All the same, one has a very sincere affection for all the airship folk. They have a child-like and bland faith, and a gentle martyrish air which is rather attractive in these disillusioned and somewhat cynical days. That is, except when the martyr side of them becomes too protuberant and they become rhetorical about their grievances and the injustice which has been done to their deflated vehicles. Then they are apt to be a bore.

A MATTER OF MONEY.

Of course, there is a good deal of excuse for them, because airships have been rather neglected. But that has been the injustice of Fate and not the deliberate malice of any human being. Naturally, the airship people blame the Air Council, and more particularly the Chief of the Air Staff, for cutting them off in their approaching prime shortly after the end of the War (1914-18). And it is very hard to make them see, with their monomaniacal outlook, that the money which would have been necessary to maintain about two airships and to have gone on with the development of advanced types was enough to pay for a squadron or two of



CANADIAN AIR SURVEY.—The Wood Depot of the Fairchild Aerial Surveys (of Canada), Ltd. The photograph was taken from a Vickers Viking.

aeroplanes which were absolutely necessary. Airships are quite nice things to have about the National or Imperial House, but they do rather come under the generic heading of luxuries. And so the Nation has had to do without them, just as a great many quite nice people since the War have had to do without their portly butlers.

After all, the fact that no other nation in the World has gone on with the development of airships does rather justify the policy of our Air Council. For in fact, the two big rigid airships which the Americans have acquired have been only natural developments of the old Zeppelin types. And we have proved fairly definitely that to make any real advance in airship construction we have to get away from strips of aluminium and go in for good reliable steel tubing.

Some day history will give his due to the Lord Thomson of Cardington, who, as Secretary of State for Air in our first Labour Ministry committed our impoverished Exchequer to the continuation of quite expensive airship experiments along entirely new lines which had been started by his Conservative predecessor, Sir Samuel Hoare. And as Lord Thomson happens to be one of the clearest thinkers we have ever had concerned with aviation, and also happens to be a trained engineer, the airship people should take consolation unto themselves in the fact that they have his support.

CAUSE FOR REJOICING.

There is really no need for them to adopt the attitude of martyrs. In fact their martyrsed attitude is one of the funniest things about them, because nobody wants to make them into martyrs.

There is a famous story of a small girl who contemplating that well-known picture of the martyrs being devoured by lions in a Roman arena remarked "Oh, mummy, there's a poor lion that hasn't got a Christian." The attitude of the airship people is rather what one might imagine to have been the attitude of a martyr in the arena when there were not enough lions to go round.

Still, martyrs or no martyrs, they are quite nice amiable folk and they ought to be feeling very pleased with themselves at the present moment, seeing that the Air Ministry in its recently published Blue Book, entitled "The Approach towards a System of Imperial Communications," has definitely laid down as a policy that the four great Imperial Air routes of the future, (A) from England to Canada, (B) from England to the West Indies, (C) from England to Australia via the Cape of Good Hope, and (D) from England to Australia via Egypt and India, shall, at some indefinitely distant date, be run by airships and not by aeroplanes.

Quite naturally this decision, being the decision of the Air Ministry, has raised the wrath of the dear old *Morning*

Post, which has blown up in two columns and a bit of flames of abuse because the Air Ministry has not decided to develop colossal flying-boats for these routes.

This of course is really the best possible justification for the Air Ministry's policy because, as one has remarked on various occasions, *The Morning Post* has a perfect genius for backing the wrong horse, or finding stumers, and if one wants to be quite sure of not being in the wrong, even if one cannot be sure of being in the right, one is always safe in taking the view opposite to that of the *Post*. Personally if one had needed any convincing that the airship was the right vehicle for these long-range Imperial services *The Morning Post's* attack would have done it.

One has complete faith in the usefulness of big flying-boats, but one also has quite a clear idea of their limitations. If one is going to be in an aircraft which suffers from engine failure somewhere in mid-Atlantic, or halfway between South Africa and Australia, or on the direct line from Ceylon to Australia, one would very much rather be in an airship, which at some time or another would drift over land, than in a flying-boat which would have to sit on the water regardless of the tumultuousness of the surface. And one imagines that a minor defect in an engine which might well force a flying-boat to alight in a sea which would possibly wreck it, might be set right quite easily in an airship while the voyage was continued at slow speed with the other engines.

Therefore, on the whole, one feels that one can wish the airship people a Happy Christmas with a clear conscience. At any rate they ought to be happy in face of the bright prospects looming some years ahead. And those who are already actively engaged on airship work in the construction of the Capitalist ship which is being built by Vickers Ltd. or the Socialist ship which is being built by the Government at Cardington, can be assured of a Happy New Year.

THE ROYAL AERO PLUS AIRSHIP CLUB DINNER.

The foregoing thoughts, futile or philosophical, whichever they may be, are chiefly produced by the Monthly House Dinner of the Royal Aero Club, which was absorbed on Wednesday last, Dec. 15. Those who intended going understood that Airships were to be the subject of discussion after dinner. But it was only when they looked at their menu cards that they found that they had apparently been lured to a Monthly House Dinner of the Airship Club, which was distinctly obtaining diners under false pretences.

Lord Thomson, the new Chairman of the Aero Club, was in the Chair, and did his duty in his own effective way, varving it on this occasion by giving a brief description of each person on whom he called for a speech, rather after the method, though not, of course, in the manner, of the old music-hall chairman of thirty and more years ago.



AERIAL SURVEY IN CANADA.—A photograph of a Vickers Viking belonging to the Canadian Government and lent by them to the Fairchild Aerial Surveys Co., engaged on a survey of country over which it is proposed to build a railway. Already a strip of country 10,000 ft. wide and 240 miles long has been covered since August and a complete mosaic of this has been sent to the railway company.

Achievements in

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Spain to Buenos Aires by a Dornier Wal flying boat piloted by Major Franco. Engine flying miles 12,518.

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LORD THOMSON, opening the proceedings, announced that the dinner was a combination of the Royal Aero Club and the Airship Club. He said that in 1873 the Reverend R. S. Medley wrote a poem in which he said that the balloon was the "emblem of a wicked man," which might account for a certain hostility to airships. He said that he was still an unrepentant believer in airships, and believed that some day R.33 would be a relic as revered as is H.M.S. *Victory*, and that our new R.101 would be but a pale and primitive forerunner of the luxurious air liners of the future. Our Empire had got to be linked up by long flights, and airships were bound to play an important part.

MR. GRIFFITH BREWER, the Chairman of the Airship Club, said that he was the oldest member of the youngest Club in London, the Airship Club. (Somebody asked *sotto voce* "What about the Florida and the Kit-Kat?") As a chairman, Mr. Brewer said, he was like Sir Joseph Porter in H.M.S. *Pinafore*, who had never been to sea, though he was the ruler of "The Queen's Navee," and that he himself had never been in an airship. He thanked the Aero Club for the help given in the secretarial work of the Airship Club. [As a speaker Mr. Brewer has a gentle and quite clear voice, but he was a trifle hard to hear at the far end of the room, which prompted some ribald youth to pass up a note inscribed "Is he the Whispering Gallery or only on the Secret List?"]

Mr. Brewer said that they had tried to get a subsidy from the Air Ministry for the Airship Club to pay for a small airship and a shed, but had failed. Their new programme was to get two more balloons to add to the one which they had already. He hoped that with these they would turn out a number of balloon pilots who would ultimately be entrusted by the Government with airships. He thought that small airships were necessary to protect shipping on the trade routes against submarines. [One fears that Mr. Brewer's bellicose ideas are not up to date. The modern big submarine would have no fear of any bomb which a small airship could carry and would simply blow the small ship to pieces with its anti-aircraft guns.]

Referring to small airships, Mr. Brewer said that during the War one of them, with a crew of two men, made a flight of 55 hours without stopping its engine. Which, he said, was a wonderful feat of endurance for the crew. [One would remind Mr. Brewer that the existing *aeroplane* endurance record, made by two pilots handling the machine alternately, is something over 45 hours without stopping.] He hoped that the Air Ministry would in due course subsidise the Club so that they could train pilots for the next war.

LORD THOMSON said that at any rate the previous speaker had adhered to the custom which had arisen at these Aero Club Dinners of asking the Government for a subsidy. He then called upon Colonel Moore-Brabazon to speak, as a Government official.

LIEUT.-COLONEL J. T. C. MOORE-BRABAZON, M.P., said that he was amused to find that a new club had been formed to push people up in balloons so as to train them as pilots of airships. He remembered when they used to push people up in balloons to train them as *aeroplane* pilots.

He said there was a close analogy between the growth of motor-ing and the growth of flying. The people who started both games did so because they were very amusing forms of locomotion. Early motorists had no high-flown visions of the future of motor-buses.

He himself believed in airships for long voyages because the *aeroplane* was up against the difficulty of night flying, and passengers in *aeroplanes* were subjected to intense discomfort. Travelling in an *aeroplane* was not nice, in fact it was a perfect Hell. The air travelling public must be made comfortable and the new big airships would give comfort, judging by the plans, which included a foyer complete with palms, and a bar.

REAR-ADMIRAL MURRAY SUETER, M.P., said that he was glad to see in the room two people who were among those first connected with airships, namely, Mr. Oswald Short, who had built the gas-bags for the ill-fated *Mayfly*, and Captain Boothby, who was a member of the crew. Admiral Sueter stated that although the *Mayfly* was wrecked, she was moored out to a mast for five days in half a gale.

He recalled that when an Admiralty inquiry was made into the wreck the inspecting Admiral looked at the ship and said "The work of a lunatic!!" But, said Admiral Sueter, German lunatics of the same kind patrolled the whole of the North Sea throughout the War 1914-18. A Zeppelin did the scouting for the submarine which sank the *Aboukir*, *Cressy* and *Hogue* in one day. And Jutland might have been a great victory if we had had airships.

Also, he said, our little airships prevented the sinking of a great many ships at sea by scaring away submarines. He congratulated Lord Thomson on having gone on with the airship programme when he was in office.

MAJOR SCOTT, late R.A.F. (of R.34, which journeyed to America and back), said that the best description he had heard of a rigid airship was "a bunch of balloons in a birdcage." He himself was proud to have been able to carry on Admiral Sueter's work, whether balloonists were wicked men or lunatics. The balloon was the egg from which airships started. But apparently something had since gone wrong with it, and it had produced *aeroplane* pilots.

CAPTAIN BOOTHBY, late R.N., said that the big airship was getting past its troubles. We might hope for two big airships two years hence. If we filled them with helium they would be indestructible, and formidable weapons of war. [But a well-aimed shell would at any rate wreck the structure even though it might not set it on fire. Even a steel-tube airship full of helium is a very fragile thing.] Captain Boothby said that he believed there was a great future for small airships.

Apparently the Air Ministry's idea was not to allow airships to compete with *aeroplanes*. Imperial Airways had tried two engines and now they were trying three engines to prevent forced landings. And, he said, if one engine stopped the others became a nice cherry colour. Yet the Air Ministry refused to pay any subsidy on airships.

WING COMMANDER T. R. CAVE-BROWN-CAVE, R.A.F., said that small airships did good work in the last war, but he would not care to say whether the same conditions would exist in the next war. For passenger work the Air Ministry were concentrating on big airships as the vital aircraft. He recommended people to go by airship and be comfortable.

SQUADRON LEADER R. S. BOOTH, R.A.F. (who saved R.33 when she was blown out into the North Sea) adopted the most correct attitude of a serving officer and instead of discussing airships merely said that a free balloon was a most pleasant form of air transport, as it was free from noise, smell and sickness.

LIEUT.-COLONEL V. C. RICHMOND said that the airship people had nothing to hide at Cardington. They were always pleased to see the Press. [But he did not say that they were pleased for the Press to see much.] He hoped that the Airship Club would be as successful as the fate of the airships had been under the Government which Lord Thomson had represented.

People who did not believe in airships should remember the lamentable effort of the late Doctor Lardner, who had proved that no steamship could get across the Atlantic because it could not carry enough coal to do so. Col. Richmond said that there was nothing impossible in making an airship strong enough to stand up to its job as a useful vehicle.

As to the new ships under construction, he recited a catalogue of their attractions such as lounges, palms, jazz bands, and what the house agents call "usual offs," and then asked whether we wanted any more details.

He expressed his belief in small airships, and said that they would have their chance when the ground organisation was completed for big airships, for then there would be housing for them. He asked what progress steamships would have made if the steamship companies had had to start all the ports in the World to shelter them.

MAJOR C. C. TURNER remarked that Mr. Brewer had omitted to say that the Airship Club's only balloon had been presented by Mr. Brewer. He recalled that when an early Zeppelin was wrecked the Germans subscribed £300,000 in a fortnight to build a new one.

MAJOR F. A. DE V. ROBERTSON said that airships would be a benefit to *aeroplanes*, as the mails which they took overseas would be distributed by *aeroplanes* along branch lines.

MR. OSWALD SHORT appreciated the compliment which Admiral Sueter had paid to him, and in turn paid a tribute to Admiral Sueter, saying that if he had remained at the Admiralty we should have been further ahead than we are, for Admiral Sueter had the gift of faith. Mr. Short also recalled that Admiral Sueter was responsible for Short Brothers' starting the airship works at Cardington. He suggested that the design of small airships was well worth the attention of *aeroplane* designers.

MR. C. G. COLEBROOK said that even if the big airship were a gamble it was one which the Empire should take. He directed attention to the remarkable change in the political attitude of General Hertzog, the South African Prime Minister, since he had attended the Imperial



NATURALISATION.—Here is seen the Fokker FVIIa with Jupiter engine recently acquired by Mr. Lowenstein, for his own private air line work between Melton Mowbray and the Continent. She is here seen refuelling with Pratt's petrol at Croydon. An interesting point about this machine is that she now carries British registration lettering, thus showing that it is possible for a foreign-built aircraft to obtain a British airworthiness certificate even though it may not have been constructed under the eagle eye of the A.I.D. Thus we have a Dutch machine owned by a Belgian and registered as British.



"Flight" Photo.

An Impression of the FAIREY "FOX" day bomber.

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Conference and had come in contact with the other leaders of Imperial thought, and Mr. Colebrook said that if such conferences were easier of access there would be less misunderstanding.

MR. C. G. GREY, having been called upon by Lord Thomson as being of anti-airship tendencies, remarked that he was nothing of the kind, for at any rate airships always added to the gaiety of nations. They would probably be quite useful vehicles for the transport of high officials who liked to travel in luxury, but he had doubts about them in time of war. He said that he once had a friend in the Navy (a statement which seemed to cause some amusement). That friend had commanded a submarine in the North Sea, and whenever a Zeppelin hove in sight he used to come to the surface and show his gun, whereupon the Zeppelin used to go away. The speaker said that with the big submarines, which apparently somebody with intelligence at the Admiralty had produced, the airship would be in a still worse case.

Personally he disliked the idea of travelling under that mass of inflammable material. Helium was too expensive for this over-taxed country. Even the United States with all its wealth could only afford enough to fill one airship. And, as his colleague Mr. Dorman had suggested, even coal gas was expensive now that it had gone up a penny a therm.

As for free ballooning, it reminded him of the Chinaman's description of tobogganing, "Gee like Hell, walkee back three mile."

LIEUT.-COL. ROBERT LORRAINE said that he liked ballooning.

LORD THOMSON, closing the discussion, said that the late skipper of the *Shenandoah*, who was killed when the machine was wrecked, told him, when he was in the States, that his style in handling the ship was cramped by the cost of helium, in that he was afraid to use his valves freely, and so he was in favour of hydrogen. The danger of it, he said, was exaggerated. Lord Thomson added that big ships ought to be a Government undertaking during the expensive preliminary experimental stage. He wished all good fortune to the youngest aeronautical Club.

LIEUT.-COL. MOORE-BRABAZON, proposing a vote of thanks to the Chairman, complimented Lord Thomson on his bold and farseeing policy in continuing to develop airships when an economy stunt would have been so much easier and more popular.

THE AIRSHIP'S FUTURE.

On the whole there seems to be quite a promising future for the airship. Only those in charge of the development of our new airships will have to hurry a bit unless they want to find themselves in the position of a political peer who was described by the late Mr. Swift MacNeill as "a man with a magnificent future behind him."

The trouble with airships is, as one said years ago, that they are like the elephant—whose agility they seem to imitate in the air—they breed slowly. As we know to our sorrow, our designers take four or five years to propagate a new design of airship. And even the Germans, building Zeppelins as a mass-production job, took nine months to deliver the goods.

Aeroplanes, on the other hand, breed like rabbits. And if it were not for birth-control in the Air Ministry and mis-carriages in Trade factories, we should by this time have had many more generations of new designs.

Consequently, aeroplanes are several hundreds of generations ahead of airships in the process of evolution. Probably the airship of to-day may be regarded as having reached about the same stage as was reached by the hairy mammoth of the pre-glacial period in Siberia as compared with the modern civilised Indian elephant who will kneel down at the word of command to take up passengers—without the help of handling-parties.

When the airship has reached a stage analogous to that of an Indian Rajah's State Elephant, complete with howdah and mahout, we shall have safe and comfortable air transport over long distances. And by that time the aeroplane will have about reached the same approximation to finality which makes bicycles and cars so dull and uninteresting.

But long before that everybody who reads these notes will be dead and comfortably buried, or cremated, so there is plenty of work for all of us to do while we are still alive, in improving both airships and aeroplanes. And in view of that cheering prospect one wishes all one's long-suffering readers a very Happy Christmas.—C. G. G.



AN AUSTRALIAN NATIONAL AIRCRAFT INDUSTRY.

The following letter has been published by the Australian Aero Club in *The Fly Paper* :—

While agreeing with the ideals and sentiments expressed in your article of *The Fly Paper*, 28/10/26, I feel that you have not quite pointed out to everyone concerned their duty.

To every person connected with Flying during the War, and to most of the thinking public, the idea of using German Aircraft or that made by her friends is abhorrent. It is unquestionably the duty of all Dominions, that, failing their own source of supply, they should use exclusively British Aircraft.

While in no way desirous of encouraging any deviation from this policy I am of the opinion that a great national obligation rests with the British manufacturer of Aircraft. At present the price of all types of British Aircraft is excessive from Moths at £800 to big machines at £22,000.

Just compare the Moth with cars selling at the same price. Even granted that mass production reduces the cost of the car, the present price of Moths seems out of all proportion. A lower price would probably lead to mass production in 'planes. Again compare the Moth at £800 with a motor-yacht of the same price. There appears to me to be considerably more work in the yacht and there is no mass production about the yacht. Comparing the big machines costing £22,000 with a Sydney Ferry Boat costing £20,000, there does not appear to be value for money in the aircraft.

The urgent necessity of to-day, a necessity of national importance, is to put the youth of the country in the air. That task would be much easier and much quicker if the manufacturers in Great Britain realised their duty and made aircraft prices somewhere near the margin of what is reasonable. That to-day to my mind is the great outstanding duty owed to the Empire by those connected with aviation.

I feel confident that when the price of aircraft is right there will be no necessity for a campaign on behalf of Australian Defence or the sale of British Aircraft. Given low-price machines the youth of Australia will simply rush for flying and vote it the National Sport. Failing the necessary reduction in price, the history of aircraft sales in Australia I'm afraid will follow along the same lines as those of motor-car sales. (Signed) G. N. MILLS.

[With all of which one agrees cordially. If British manufacturers will not discover how to reduce their prices then the Americans will show them how. It is up to the British Aircraft Constructor to prove that he is not the same kind of fool as was his predecessor, the British Motor Manufacturer.—C. G. G.]

WITH BANJULELE TO BAGHDAD.

Mr. T. Neville Stack and Mr. B. S. Leete, who are engaged on a flight from England to India on two D.H. Moths (A.D.C. Cirrus II engines) arrived at Baghdad on Dec. 16, with the banjulele still safe.

The flight across the desert from Cairo to Baghdad, a distance of 860 miles, was made in three stages, with stops at Amman and Rutbah Wells. They met a sand storm in Palestine, and the whole journey across the desert was made against head winds with several rain storms.

The Times correspondent in Baghdad writes :—

The Royal Air Force appreciates the difference of this remarkable journey from similar more widely advertised long-distance flights which included Baghdad as a port of call. The ground organisation appears to have been comparatively trivial compared with the elaborate arrangements for other memorable flights, and the pilots are carrying out the duties of navigators and mechanics in addition to the routine task of flying the machines.

Added to this is the excellent performance of the two D.H. Moths and their Mark II Cirrus engines. The equipment has given no trouble whatever in spite of the fact that from the very beginning of the flight bad weather has been experienced, including head winds practically all the way.

It appears that the D.H.60, or Moth, will soon rival the D.H.50 as a globe-trotter.


MAKING THE EMPIRE AIR-MINDED.—A snapshot of a regular reader of "The Aeroplane" at Big Creek Post Office, Chilcotin, British Columbia. Ninety-six miles from the railway, thirty miles from the telephone, and thirty miles from the doctor. Mails arrive once a fortnight, brought by teams twenty-five miles from Hanceville, having been relayed there from Williams Lake. The English cowboy in the picture hopes for the day when aircraft will bring him within an hour or so of civilisation.



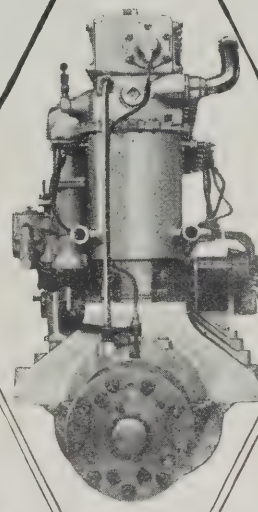
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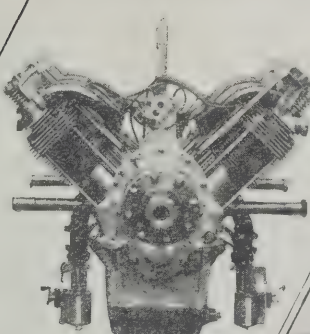
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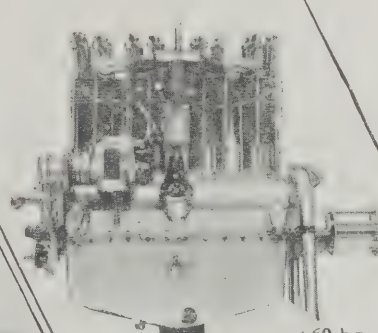
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The London Gazette.

Dec. 14.

GENERAL DUTIES BRANCH.—J. F. Griffiths is granted a S.S. comm. as a Plt. Off. on probation with effect from and with seniority Dec. 3; Plt. Off. on probation B. B. Dowling (Lt., Manch. R., R.A.R.O.) is confirmed in rank (Nov. 23); Plt. Off. R. N. T. Gape is promoted to the rank of Flg. Off. (June 1) (since deceased) (substituted for the notification in the Gazette of Aug. 17).

The following are transferred to the Reserve:—CLASS A: FLT. Lts.—M. Burbidge, A. E. Reynolds (Dec. 12); E. H. Attwood (Dec. 13). FLG. OFFS.—L. W. Beck, D. E. Hall, G. F. Mackay (Dec. 12); B. A. Davy (Dec. 13). CLASS B: FLT. LT.—C. A. Elliott (Dec. 12). FLG. OFF.—H. A. Dinnage (Dec. 12). CLASS C: FLT. LT.—G. H. Allison (Dec. 12). FLG. OFFS.—C. H. F. Nesbit (Dec. 12); W. J. Brown (Dec. 13).

Flg. Off. A. O. Pollard, V.C., M.C., D.C.M. (Capt., T.A. Reserve), resigns his S.S. comm. (Dec. 15); Flg. Off. M. Kortright (Lt., Suffolk Regt.) relinquishes his temp. comm. on return to Army duty (Nov. 20).

STORES BRANCH.—Flt. Lt. H. V. Robbins (Lt., The Border Regt.) is granted a perm. comm. in this rank on completion of probationary service (Aug. 1, 1925).

MEDICAL BRANCH.—Flt. Lt. (Hon. Sq. Ldr.) W. R. Reith, M.D., A.M., relinquishes his temp. comm. on account of ill-health (Dec. 10).

CHAPLAINS BRANCH.—The Rev. A. McHardy, M.C., M.A., to No. 2 granted the relative rank of Air Commodore on appointment as Chaplain-in-Chief, R.A.F. (Oct. 25).

RESERVE OF AIR FORCE OFFICERS.—The following Plt. Offs. are promoted to the rank of Flg. Off.:—D. P. Jones (Oct. 27); A. C. Robertson (Nov. 5); F. M. Brownlee (Nov. 21); E. J. Dilnutt (Dec. 2).

The following Flg. Offs. relinquish their comms. on completion of service:—W. H. Herd (Oct. 23); G. A. Cowler (Dec. 8); R. C. Rodger, M.C., D.C.M. (Dec. 9); C. G. Boothroyd, D.F.C. (Dec. 12).

Appointments.

Week ending Dec. 20.

GENERAL DUTIES BRANCH.—Wing Commanders R. M. Hill, M.C., A.F.C., to H.Q., Egypt, for Technical Staff Duties, 30/11. D. S. K. Crosbie, O.B.E., to R.A.F. Depot, Uxbridge, Supernumerary, pending posting on transfer to Home Estab., 20/11. E. H. Johnston, O.B.E., D.F.C., to R.A.F. Depot, Uxbridge, Supernumerary, pending posting on transfer to Home Estab., 25/11. B. L. Huskisson, D.S.C., to No. 10 Group H.Q., Lee-on-Solent, for Air Staff duties, 20/12.

Squadron Leaders A. Coningham, D.S.O., M.C., D.F.C., A.F.C., to R.A.F. Cadet College, Cranwell, 20/12. T. Q. Studd, D.F.C., to No. 4 F.T.S., Egypt, 29/11.

Flight Lieutenants S. T. Freeman, M.B.E., to M.A.E.E., Felixstowe, 8/12. P. Murgatroyd, to Heliopolis Details, Egypt, 29/11. W. A. Harvey, to R.A.F. Station, Upavon, 14/12. W. H. Poole, A.F.C., M.M., to No. 1 F.T.S., Netheravon, 20/12. P. H. McSwiny, to A. and G. School, Eastchurch, 10/1. W. R. Castings, M.B.E., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 4/1, and to Air Ministry,

Directorate of Personal Services, 10/1. C. H. Cahill, to M.A.E.E., Felixstowe, 4/1.

Flying Officers J. E. G-H. Thomas, to R.A.F. Base, Gosport, 9/12. N. T. Goodwin, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/11. R. A. A. Cole, to Aden Flight, 24/11. F. G. Jennings, to C.F.S., Wittering, 21/12.

Pilot Officers B. B. Dowling, B. E. Moody and W. J. Pickard, to No. 2 Sqdn., Manston, 14/12. H. D. Gunton and R. H. Donkin, to No. 13 Sqdn., Andover, 14/12. J. A. Tindall and V. G. A. Hatchers, to No. 7 Sqdn., Bircham Newton, 14/12. E. D. MacL. Hopkins, C. P. Ashton-Jinks, W. M. Phillips and G. A. Underwood, to No. 4 Sqdn., S. Farnborough, 14/12. F. Gower-Jones and A. F. Merritt, to No. 12 Sqdn., Andover, 14/12. C. S. John, to No. 58 Sqdn., Worthy Down, 14/12. H. C. Johnson, to No. 99 Sqdn., Bircham Newton, 14/12. D. Mackenzie, to No. 207 Sqdn., Eastchurch, 14/12. E. G. Searson, to No. 16 Sqdn., Old Sarum, 14/12. H. J. Walker, to No. 39 Sqdn., Spittlegate, 14/12.

MEDICAL BRANCH.—Squadron Leaders R. E. Bell, M.B., to No. 23 Group H.Q., Grantham, 6/1. T. C. St. C. Morton, M.D., D.T.M., and H., to R.A.F. Depot, Uxbridge, 2/1.

Flight Lieutenants G. H. H. Maxwell, M.B., to E. and W. School, Flowerdown, 18/1. E. C. K. H. Foreman, to H.Q., Halton, 20/1. L. P. McCullagh, M.B., to R.A.F. Station, Tangmere, 17/1.

STORES BRANCH.—Pilot Officer H. M. S. Dawes, to No. 24 Sqdn., Kenley, 17/12.

CHAPLAINS BRANCH.—The Rev. A. McHardy, M.C., M.A., to No. 2 F.T.S., Digby, on transfer to Home Estab., 6/1.

The Imperial Defence College.

The following officers of the R.A.F. will attend the first course at the College of Imperial Defence:—

Wing Cdr. R. E. C. Pierce, D.S.O., A.F.C., *p.s.a.*, Wing Cdr. W. S. Douglas, M.C., D.F.C., *p.s.a.*, Wing Cdr. E. L. Tomkinson, D.S.O., A.F.C., *q.s.*, Sq. Ldr. G. C. Pirie, M.C., D.F.C., *p.s.a.*

Signal Communication in War.

A lecture was delivered at the Royal United Service Institution on Dec. 15, by Major R. Chenevix Trench, O.B.E., M.C., on "Signal Communication in War." Major-General A. R. Cameron, C.B., C.M.G., Director of Staff Duties, War Office, was in the Chair.

Major Trench said that signal communication was one of the greatest problems of modern war. The striking power of the sea, land and air forces of to-day was growing beyond a commander's power of control.

After describing the signal communication methods employed in the Army, the lecturer went on to describe the signal communications used in combined operations. He de-



A MAJOR TRADE.—Air Vice-Marshal Sir John Steel, K.B.E., C.B., C.M.G., Officer Commanding the Wessex Bombing Area, Air Defences of Great Britain, inspecting the passing-out term of Aircraft Apprentices at the Electrical and Wireless School, R.A.F., Flowerdown. At a meeting of the Royal Aeronautical Society on Dec. 16, Group Capt. R. P. Ross, D.S.O., A.F.C., commanding this unit, objected to Wireless being referred to as a "minor trade." There are 300 Aircraft Apprentices at Flowerdown. They are a remarkably smart lot.



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A large luggage bay is located behind the cabin.

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The auxiliary starter motor is operated from the pilot's cockpit.

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scribed the work of a Squadron co-operating with a Division and said that all the wireless apparatus for these operations was found and maintained by the R.A.F.

The lecturer also described the various methods of communication used, such as W/T, R/T, flares, ground-panels and grappling, and their advantages and disadvantages. He thought that an advanced landing ground with a special cable to Divisional H.Q. was necessary for Army Co-operation aircraft.

Major Trench said that a successful example of the co-ordination of the three Services existed in the Signal Board, a permanent Board, sitting in peace or war, to co-ordinate the signals of the three Services. It was absolutely essential that the signallers of the three Services should use the same procedure and speak the same language.

[This Board is shown in the Air Force List under the title of Signals Committee, and its R.A.F. members are Wing Cdr. G. P. Grenfell, D.S.O., and Flt. Lt. V. H. Tait.]

HIS MAJESTY'S ARMoured CARS.

Very few people, even in the R.A.F., unless they have served in Iraq, know much about the functions, manners and customs of the Armoured Car Sections of the Royal Air Force. Therefore one believes that the pictures which appear in this issue will be of considerable interest to many people in the R.A.F. as well as to the civilian readers of this paper.

The armoured cars in Iraq were taken over by the R.A.F. from the Army when the supreme command in Iraq was given to an Air Officer of the Royal Air Force. Presumably the idea was that troops of His Majesty's Army in Iraq should be used for garrison purposes and for the bigger punitive expeditions and that the mobile units for ordinary patrol work should belong to the R.A.F., whether in the air or on the ground.

The personnel of the Armoured Car Companies are aircraftsmen of the R.A.F. under R.A.F. officers who have been taken off flying either permanently or temporarily. Thus the armoured cars afford a change of occupation which, however, is by no means a haven of rest, as the pictures show.

This inter-change of personnel naturally makes for easier co-operation between the armoured cars and the aeroplanes, as the officers of the A.C. Companies understand the movements and the needs of the aircraft with which they co-operate better than they would if they had no air experience.

The duties of the armoured cars are exceedingly varied. For example, they may be used in ground operations against tribes which are causing trouble. A year or so ago armoured cars co-operating with aeroplanes utterly broke a raid by the forces of Ibn Saud, Sultan of Nejd, while that potentate was temporarily hostile, in the interval between being our wartime ally and again our ally to-day. These forces tried to raid the Trans-Jordan Kingdom which we have received the mandate to protect.

Also the armoured cars do desert patrols and reconnaissances when such work is required at closer quarters than is possible for aircraft.

On the civil side they are employed in driving new trails on a compass course across the desert, which trails are of use to aircraft as well as to the motor caravans which in these days are becoming quite numerous.

Most people are under the impression that the Nairn mail service between Haifa and Baghdad is the only motor service across the desert, but one gathers that several native firms, colloquially known as Wogs, also operate motor services between Baghdad and Beirut, and that one of these, equipped with Lancia cars, is quite reasonably effective.

Yet another of the duties of the armoured cars is to provide mail escorts for the Nairn Transport Company. These escorts run 500 miles out across the Syrian Desert in all weathers and temperatures, below freezing point in the Winter and up to 127 in the shade in the hot season.

Yet another form of duty is escorting persons of importance who cross the desert by car in preference to travelling by

air. One of these jobs recently was escorting Ali, the former King of the Hedjaz, and his family, across to Baghdad on a visit to his brother, King Feisal of Iraq.

Among minor duties the armoured cars have been used to take out and erect lighthouses on the Cairo-Baghdad air mail route for night-flying practice. And they are generally used for the salvage of crashed aircraft and the destruction of such parts as may not be worth transporting.

As the pictures show, it is the humour of the personnel of the armoured cars to give each car a name, after the manner of His Majesty's ships. The idea is good, for it gives the car a personality which adds to its crew's interest in it.

A few additional words describing the pictures may be of interest.

No. 1 shows seven Rolls-Royces of No. 4 Armoured Car Company ready for the desert route.

No. 2 shows how the crews of the car go into action when not actually firing from the cars themselves. This picture was in fact taken during a practice shoot.

No. 3 shows the type of lighthouse which is being used experimentally on the desert route. This particular light is on the landing ground at Falluja and the people shown are the personnel of the armoured cars and Iraqi Arab police.

No. 4 shows a Rolls-Royce wireless tender leaving the Euphrates Ferry at Falluja.

No. 5 shows the Rutbah Fort, which is practically the half-way house between Palestine and Baghdad. It is actually 300 miles from Baghdad. Besides being a fort it is a Government rest house, and a number of rooms in it are used by the Nairn Transport Company as an hotel. Presumably Imperial Airways Ltd. will acquire similar premises.

No. 6 shows a section of No. 4 Armoured Car Company with four Rolls-Royce armoured cars and two armed Fords, which apparently act as scouts and tenders.

No. 7 shows a desert reconnaissance in progress, the force consisting of one armoured car as the fighting unit, with a Rolls-Royce tender carrying wireless apparatus and stores.

No. 8 shows His Majesty's armoured car *Conqueror* bogged near Landing Ground "H" on the Air-mail route. This occurred in March last. The box on the running-board is a 36-gallon tank of water.

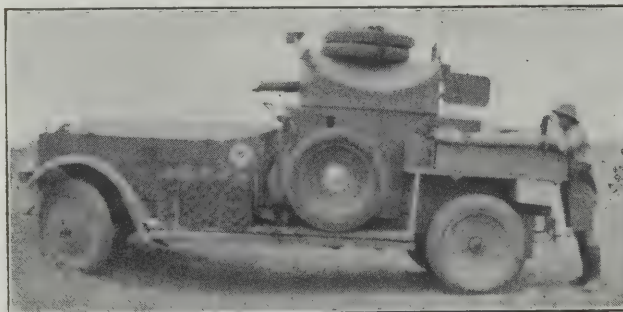
Such bogging is a very frequent occurrence in the Winter season. The digging out of a bogged car is a troublesome job, for any effort to drive the car out merely digs the wheels in deeper.

From what one can gather, none of our armoured cars are equipped with that variety of "spade chain" which is obtainable from stock at almost any decent automobile store in the United States. For the information of those concerned, these chains are fitted like ordinary Parsons non-skid chains, but on the tread the place of the chain is taken by a cast-steel plate curved to fit the tread of the tyre, and from that plate rises at right-angles a thwart-wise rib about as big as a man's hand. A wheel so fitted looks rather like a paddle-wheel of a ship. With these spades it is almost impossible for a car to get bogged unless a wheel falls into a hole.

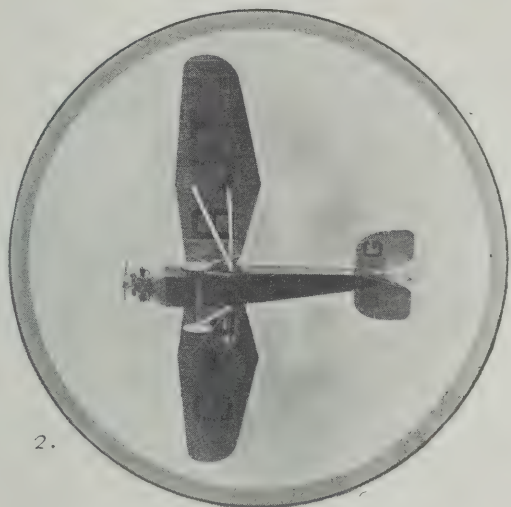
No. 9 shows the Iraqi camel police, who co-operate with the R.A.F. in the desert, taken at Habbaniya. They are said to be extremely efficient. Their uniform strikes one as curious in that it consists of a perfectly good whipcord tunic, rather like our ordinary field-service jacket, worn over the ordinary Arab petticoat instead of riding breeches.

No. 10 shows armoured cars returning from a reconnaissance over the Syrian Desert, and approaching the pontoon bridge at Baghdad built by the late General Maude.

Of the two independent pictures, one shows H.M.A.C. *Conqueror* in action, using the Nahrwan Canal as cover. This canal is part of the old Babylonian canal and irrigation system dating to anywhere before 600 B.C. The other shows one of the Nairn desert mail cars which run between Haifa and Baghdad. These cars are all Cadillacs, but one gathers that Mr. Nairn would have used Rolls-Royces if they had been obtainable when he started the service.



THE DESERT PATROL.—On the left is H.M.A.C. "Conqueror" firing, and on the right is one of the cars of the Nairn Transport Co., who run a regular mail and passenger service between Haifa and Baghdad across the desert. The route is patrolled and guarded by Armoured Cars of the R.A.F.



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2. The Westland Widgeon.

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Our designs comprise all types from private single seaters to large twin engined bombing machines.

In these days road travel is anything but pleasant. By owning a light passenger machine you can recapture the joys of travel. We intend to publish shortly particulars of Widgeon III, a light passenger Monoplane which will be within reach of the man of moderate means. The machine folds, and will go comfortably into an ordinary garage. Widgeon II, the parent machine was the fastest machine in the Grosvenor Cup Race this year, with an average speed of 105.5 m.p.h.

We are supplying numbers of machines to the Royal Air Force both at home and abroad. We have our own 4 ft. wind channel for testing models, and our extensive aerodrome is situated by the side of the works for testing the finished machines. Enquiries are solicited for aircraft for all purposes.

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WITH THE ARMoured CARS IN IRAQ.—(Left to right, top to bottom): (1) Rolls-Royce cars of No. 4 Coy. (2) "Harvester's" gun. (3) The light-house at Falluja. (4) W/T tender coming off the ferry at Falluja. (5) Rutbah Fort, on the Air Mail Route. (6) "B" Section, No. 4 Coy. (7) A desert reconnaissance. (8) "Conqueror" bogged. (9) Iraqi camel police. (10) The Maude Bridge, Baghdad.

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THE "HORSLEY."

{Flight Photo.

The Hawker Horsley was selected, after exhaustive tests, as the R.A.F. Standard Day Bomber, once again demonstrating the efficiency of Hawker design and construction.

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THE RHYMES OF RUFUS RUDERBAR.

At the Depot.

T. SQUADRON.

Before a raw recruit is made
To take his place upon parade
He's led off to the Transport Yard
Where aero-engines, running hard,
Direct their blasts upon his stomach
And make his quivering ear-drum ache
And gradu'ly inure him to
Our S.M.'s soft and dove-like coo.

(The ostensible reason is to teach recruits airscrew drill, but the real reason is as stated.)

SCHOOL OF P.T.

Contortions that would lay out flat
With envy any acrobat
Are here performed in normal course
To benefit our vital force;
And while the doctors glum look on
To see their occupation gone
And pass remarks in accents bitter
The R.A.F. grows daily fitter.
Each day the supple personnel
More supple grow and soon they'll well
Attain the object of this school—
To make a human two-foot rule.

THE CENTRAL BAND.

As one wanders through the grounds
The ear's assailed with horrid sounds—
Pandemonium let loose—
Like the vulgar, loud abuse
With which the larger felines greet
Their keepers as they bring them meat.
These dreadful sounds, I understand,
Denote the practice of the Band.

THE STORES OFFICER.

You'll find him in his office seated,
A cosy spot and snugly heated
With COAL, the best from off the pile,
And chuckling gaily inwards while
Those who have incurred his hate
Get naught but high-explosive slate.

Our Adjutant.

(AN AUTOBIOGRAPHICAL MEMORY.)

Our Adjutant's a wizard and can prove by rule of three
That none upon the station works so steadily as he;
For when the gay thermometer beneath the heat wave mounts
You'll find him trotting sternly off to check the bar accounts.

His motto is "Decentralise as largely as you can";
Which means "Sit back and take a rest and let some other man
Do dirty jobs, while you look on to see he doesn't shirk—
And anyhow you'll always find some fool who looks for work."

Our Adjutant's a hermit and, except for short week-ends,
He never, never goes on leave for binges, busts or bends;
He labours hard from Tuesday night to Thursday morn or so,
Then off upon his short week-end our Adjutant doth go.

I'll admit that this is libellous against the average
Adjutant who slaves away to fill the virgin page
With periodical returns which Ministry devours,
But this one is a wizard, is this adjutant of ours!

The Pen is Mightier than the Sword.

The Rulers of our fate are men
Who wield a keen and subtle pen:
Gone are the days when strength and skill—
At-arms, allied to dauntless will,
Could wrest from life a competence
Or teach a less skilled foeman sense.
Proclaim the dreadful truth abroad—
The Pen is mightier than the Sword.

The erring youth in days gone by
Who had incurred the angry eye
Could most emphatically reckon
On he would get it in the neck.
But that is changed; the peccant he
Is merely assured that the
Air Council with displeasure note
That he has played the giddy goat

And nowadays does C. G. G.,
When up against the Admiralty,
Pick up a large and knobby mace
And bash a Sea Lord in the face?
Or else in Whitehall have a fight
To settle which is in the right?
No! Snugly seated in his den
He reaches for his fountain-pen.

Gone are the days when forcefulness
Could rescue damsels in distress;
The Sword cannot avert the wreck,
The Pen alone can sign the cheque.
When Air Vice-Marshals quail before
The Pencil of an auditor
It must be clear to lesser men
The Sword cannot compete with Pen

The Spread of Aviation.

It is not strange a BIRD should play
Above the tree-tops—EAGLE, JAY,
PEACOCKE, PIGEON, WREN and ROOK,
HOBBY, FINCH and CHICK and DUCK,
COCK and WOODCOCK, SWANN and DOVE
Disport themselves in realms above—
But wide-spread aviation's nigh
When other creatures start to fly.
For BROCK the badger leaves his lair
To taste the joys of upper air;
The lordly SALMOND and the PARR
And ROACH all aviating are;
The SPRATT, the PIKE, the BRILL, the DABBS
Leap lightly from their marble slabs.
While rising from the vasty deeps
Into the air the DOLPHIN leaps
To join the BULLOCK and the STEER
In mazy aerial career.
The FOX, when followed hard by hounds,
Above the cloud-banks swiftly bounds
To frolic gaily there amid
The gambols of the LAMB and KIDD.
If things continue at this gait
All nature wide will aviate
And only Kiwi will be found
With toes dug fast in solid ground.

[NOTE:—

All these animals exist
Within the Monthly Air Force List.

I know that Rook should rhyme with Look
And Duck should rhyme with Luck,
But Duck must here be rhymed with Book
Or Rook be rhymed with Muck.

The Further Spread of Aviation.

[Demonstrating that the Kiwis must fly if they wish to remain on the ground.]

Each animal with FEATHER, HIDE and SCALES a-flying goes
And this example's followed by each PLANT and FLOWER that blows,
The CAMPION and LAVENDER, the STOCKS, the PINK, the ROSE;
And HAY and ROOT among the crops in MEADOWS, FIELD and
PLAYNE,
Where rustic STILES lead off from RHODES along the quiet LANE.

While all the merry GREENWOOD—the ALDER, BIRCH and PYNE,
The POLLARD, BERRY, OAKES and BUSH, ELLAM, TEEK and
VINE,
FORREST, WOOD and GLEN and GROVES—has fallen into line
With WATERS, POOL and BOURNE and FORD, with BURNS and
BROOKE and WEIR
And all are flying gaily through the crowded atmosphere.

CLIFF and CRAIG and HEATH and DOWN and MEAD and MARSH
and DALE
Across the noisy HEAVEN on their AIREY pinions sail,
While MOSS and COMBE and PARK behind come swiftly in their
TRAILL;
And joys of aviation DREW the CHAPPELL KIRK on high
Where, joined by FLINT and STONE and ROCK, incessantly they
fly.

So thus we reach the following and curious paradox—
Since mammals, fishes, reptiles, and forests, rivers, rocks,
And flowers and fruit have joined the birds to fly in airy flocks
The wretched Kiwi soon will find he has not anywhere
To place his feet on solid ground unless he takes to air.

THE AIR SERVICES ASSOCIATION.

The Annual Re-union of the Air Services Association will
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sions Restaurant, 24, Victoria Street, S.W.1, on Jan. 8, at
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if sufficient non-dancers are interested.

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monds, hon. sec., 50, London Wall, E.C. Guests may be
invited and new members can be enrolled at the Restaurant.
The Association includes serving members of the R.N.A.S.,
R.F.C., R.A.F., and W.R.A.F.

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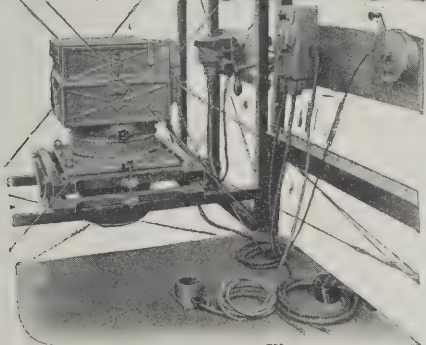
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THE TREND OF AIRCRAFT DESIGN IN FRANCE.

By W. H. SAYERS.

To be known as one who has visited the Paris Aero Show and to appear in any of those places where the more or less air-minded do congregate is to invite interrogation. The general nature of such an interrogation is usually decidedly comprehensive—it will take some such form as "What do you think of it?"—"Is it worth seeing?"—"Is there anything interesting there?"—"Are the French really doing anything worth mentioning?" etc.

Now questions such as these can be answered very simply. There were at the Grand Palais—apart from side-shows such as the exhibits of the French Military Air Service, the Air Lines, the Section Technique, and so forth—fifty different aeroplanes and just about fifty different engines. It is a little difficult to conceive of an exhibition of which this could be true which would not be worth seeing, or which would not contain something interesting. And therefore the general answer to these general questions must be "Yes."

When that answer has been returned however it is invariably found that the interrogator wants more detailed information. What in particular is worth seeing? How do French aircraft compare with our own in design, construction and performance? and so forth.

Now these questions are exceedingly difficult to answer shortly and accurately,—more particularly when one has just returned from a three days' visit in which one has had to attempt to collect data concerning practically every one of the 100 aeroplanes and engines there assembled.

The Show is open for nine hours daily, but even journalists require occasional refreshment. Say one has eight hours a day in the Salon—that means gathering impressions and making notes of strange machines and engines at the rate of a little over four per hour. This produces a certain amount of bewilderment for a day or two, and requires time for mental digestion. However one will attempt to put some impressions of a more or less detailed nature on record.

AEROPLANE DESIGN.

In the matter of design there is a considerable difference between British and French practice. The French are a

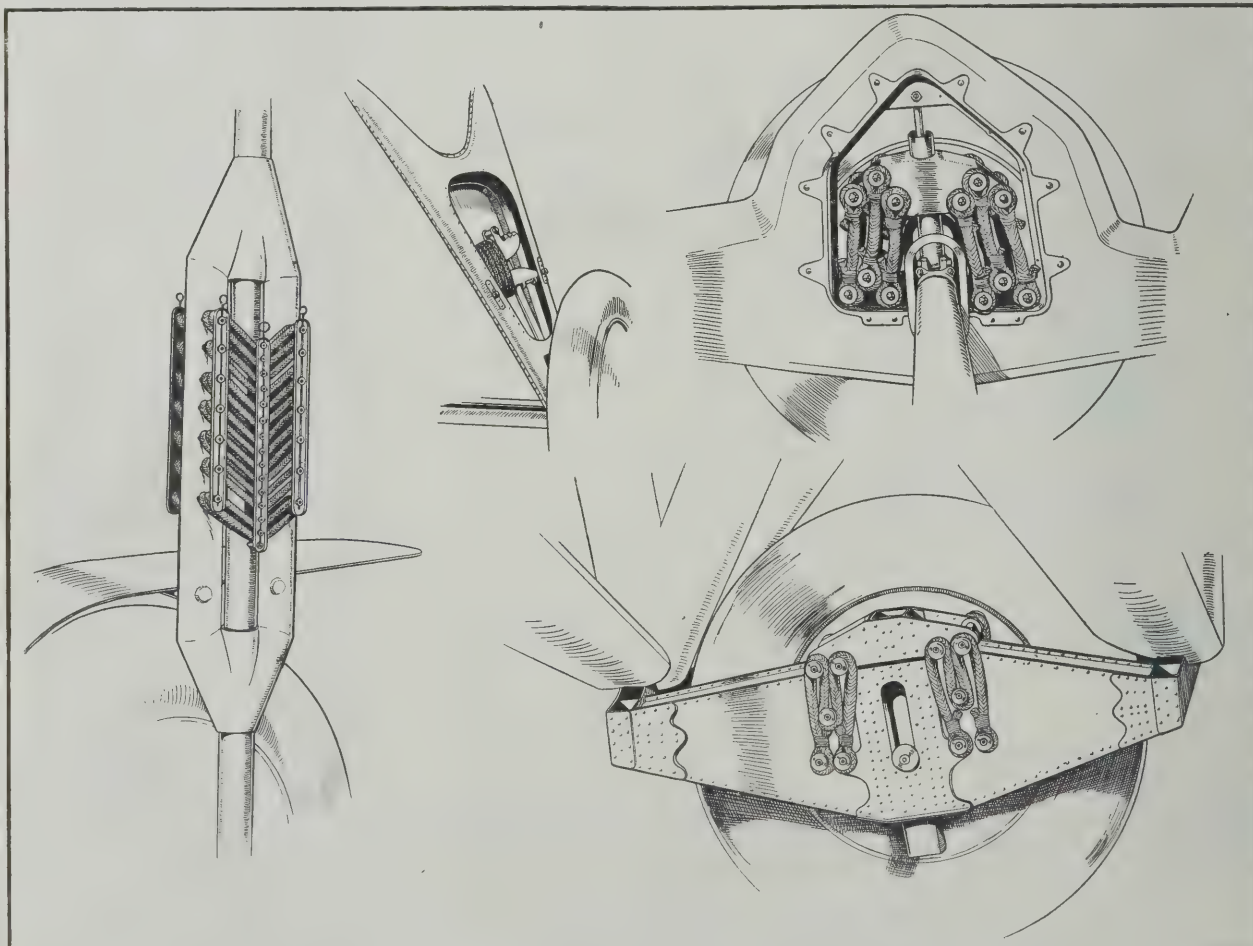
mechanically ingenious race with a hankering after novelty. Whereas British designers may be suspected of somewhat too great a regard for "Safety First" and seem loth to abandon the well-tried braced biplane, French designers are as a race out to try to produce something aerodynamically novel in the hope that it will also prove efficient. Hence a much greater variety of aircraft types is to be found in France.

It may be doubted whether these machines on the whole have any great advantages over the British type of braced biplane. Such as they may have are due rather to general cleanness of body lines, and to the decidedly different regulations in regard to stress requirements which are enforced in France.

It can be said that some of the best French machines compare very favourably indeed with the products of any other nation in their own class. It is difficult in the face of its actual achievement to believe that the Breguet XIX. is anything other than one of the World's very best aeroplanes, and the amazingly large share of the World's Records held by French aircraft could never have been secured by poorly designed and badly constructed machines. [On the other hand no Air Ministry stress merchant would pass the Breguet system, which is common to other French Firms, of carrying the main load-wires to the undercarriage, and, worse still, through the centre of the wheels. And one doubts whether any R.A.F. squadron which did a lot of flying would consent to use the springing system of those same wheels.—C. G. G.]

ART VERSUS COMPILATION.

On the other hand, some of the products of quite well known French designers are startling, almost unbelievable. The explanation of this state of affairs is one believes to be found in French national characteristics. A French designer does seem to see his design as one complete unit, and the whole has to satisfy his eye. Designing is treated for what it really is—an art. Some of it is mighty poor art—some, on the other hand, is amazingly good.



UNDERCARRIAGE SPRINGING FROM THE PARIS SHOW.—Left, the springing of the three-engined Fokker monoplane (type F.VII 3M.). Top, centre, the Morane shock absorber encased in a duralumin undercarriage strut. Right, top, the Béchereau springing, which is fitted with a small pneumatic dash-pot. Right, bottom, the springing of the Mureaux monoplane. The top of the wheel and the axle-box girder are covered by a pressed duralumin housing, which is not shown.

TITANINE DOPE



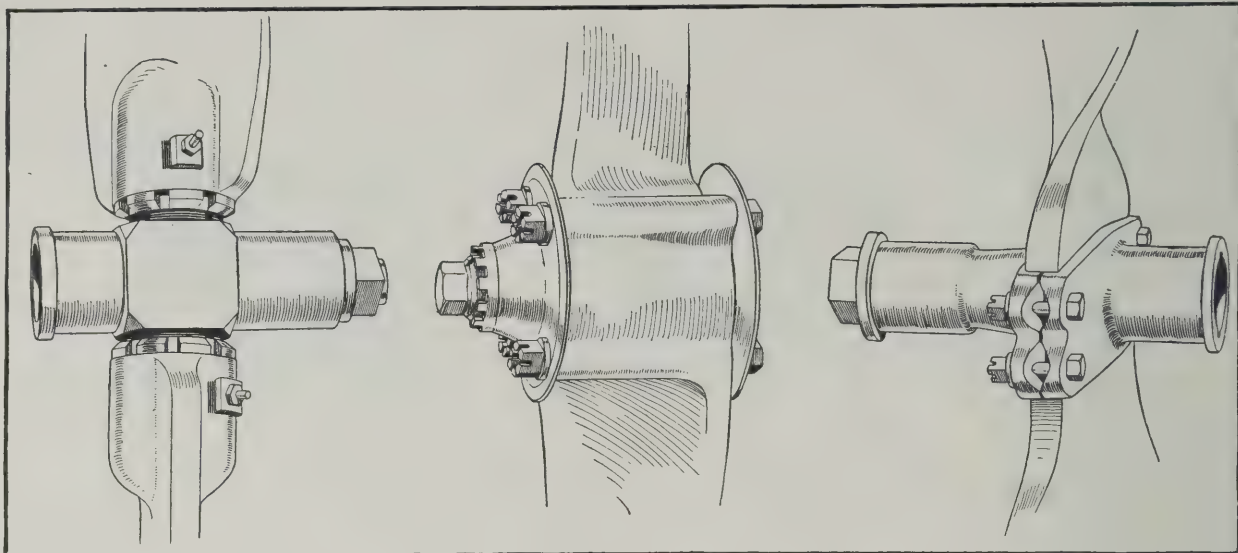
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METAL AIRSCREWS AT THE PARIS SHOW.—Left, the Levasseur adjustable pitch airscrew. In this the forged blades of duralumin are screwed (internally) and fit onto the steel boss. A vernier locking device permits small adjustments of pitch. Centre, the Comte forged duralumin airscrew marketed by the Loire-Gourdou-Leseurre firm. Right, the new Levasseur-Reed with the latest Reed steel boss rendering the boring of bolt holes unnecessary.

The English designer is a much more practically-minded person and is rather apt to regard an aeroplane as an assemblage of organs (wings, fuselage, tail, undercarriage and power plant) which provided that each unit is up to its own particular job is bound to function when put together. And in fact it does, very much better than the bad specimens of the artistically designed type, but not so surprisingly well as the really successful ones.

PERFORMANCE FIGURES.

On the face of the figures for performance given by the French manufacturers it appears that taken all round the French Air Services get surprisingly good performances from their newer machines when the figures for useful load and engine power are considered. When one attempts to compare these figures with corresponding figures for British aircraft however somewhat serious difficulties arise.

In the first place the official test figures for new British aircraft are usually not available for the most recent types of machine. Secondly, when they are, they are not directly comparable with the French figures. One reason for this is that a French aeroplane on official tests does low altitude speed tests with an airscrew designed for speed, and climb tests with an airscrew designed for climb.

The argument in favour of this process is quite rational. If you want to use the machine for speed work low down or to know the best it can do under those conditions, you must fit an airscrew of characteristics distinctly different from those giving the best results in climb.

British machines, however, are compelled by the Air Ministry to do all their tests with one air-screw designed to give the best all-round performance, on the grounds that even if it were intended to use the machine sometimes as a low-altitude fighter and at other times as high up as it can be coaxed you cannot in service carry two alternative airscrews about with you and change them as required. The

result is that British figures give a lower maximum speed and a lower climb than could be attained if French practice in this matter were adopted.

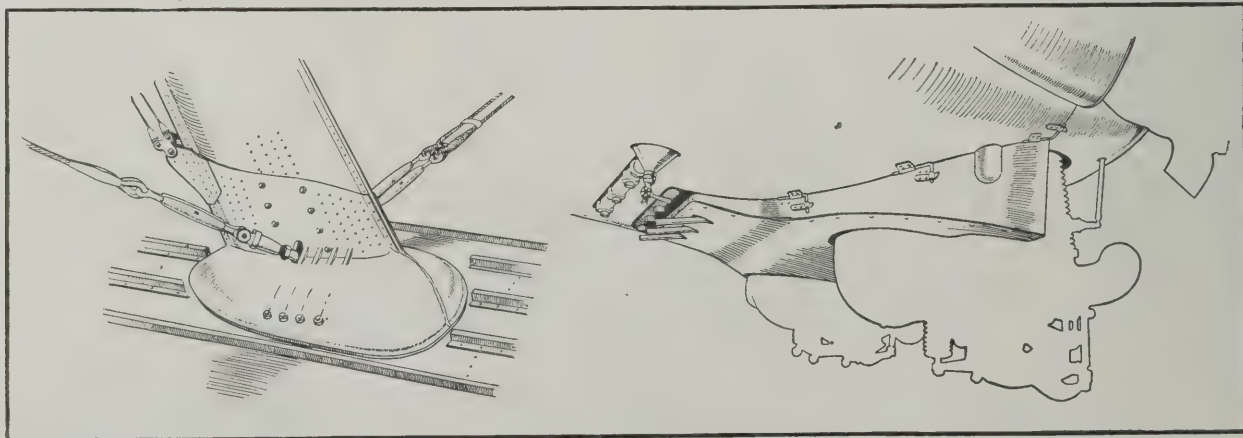
[Of course the Air Ministry argument, like those of most experts, is sheer nonsense. In war a machine should have either speed or climb. A compromise is dangerous. And there would be no real difficulty in war, when money is worth nothing, about transporting two classes of airscrews for each fighting machine.—C. G. G.]

STRENGTH AND STRUCTURE WEIGHT.

A second feature which makes difficult the comparison of French and British designs on a basis of absolute merit is to be found in the difference between official requirements as to strength. The predominant strength requirement for French service aircraft is capacity to stand pulling out of a dive at high speeds. So the French Authorities call for very high factors in the wing structure when the C.P. is fairly far forward.

To meet this requirement the average French high-speed machine has its rear spar far forward in the chord, where it will take a large share of the load in this condition, and consequently, despite the very high factors achieved, French wings are not as much heavier than British wings as might be expected.

In this country the diving condition is given great importance, not so much from the point of view of pulling out of a dive, as from a consideration of the very great torsional stresses on the wing, and the very heavy loads on tail and fuselage, which occur in a dive at high speed. To secure the load factors in nose dive which are demanded in this country, it is advantageous to keep the rear spar well back in the chord, where it contributes little to the strength of the wing when pulling out of a dive, and to use a very strong fuselage and tail structure, which are not currently found in French designs.



DETAILS FROM PARIS.—Left, strut fitting on the Breguet duralumin float. Right, the muff supplying hot air to the carburetor of the Jupiter engine on the Loire-Gourdou-Leseurre Fighter. This takes the place of the standard exhaust air heating arrangement usual with the Jupiter.

World's Non-stop Record Broken on WAKEFIELD CASTROL!

On October 28th, M. Coste and Capt. Rignot left Le Bourget on a Brequet XIX biplane (500 h.p. Hispano-Suiza engine), and 32 hours later landed at Jark, Persia, having covered 3,390 miles

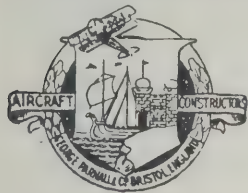
—thus breaking the World's long-distance non-stop record. They then flew on to Calcutta, and thence returned to Le Bourget, having covered in all 12,420 miles in 106 hours' flying time.

To ensure the absolute reliability and minimum consumption essential to beat duration records, M. Coste and Capt. Rignot followed the well-established precedent by using—



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

It has been said that, as a result of this difference of attitude as regards strength, the British type of fighter is quite safe in a dive but liable to fail if pulled out brusquely at high speeds, whereas the French fighter could quite safely be pulled out of a dive if it did not fail before the pulling-out stage was reached.

The fact is that no modern high-speed machine may safely be dived to its limiting speed and then pulled out with any sort of vigour. French technical opinion seems to regard the danger of ham-fisted handling in a reasonably high-speed dive as greater than that of holding on in a dive till an excessive speed is attained. British opinion seems to be the precise contrary, yet both opinions lead to the production of reasonably safe machines. Possibly the explanation is to be found in the characteristics of the average pilot of the two nationalities.

Certain authorities have expressed the opinion that the

WIRELESS ON THE CAIRO-KARACHI LINE.

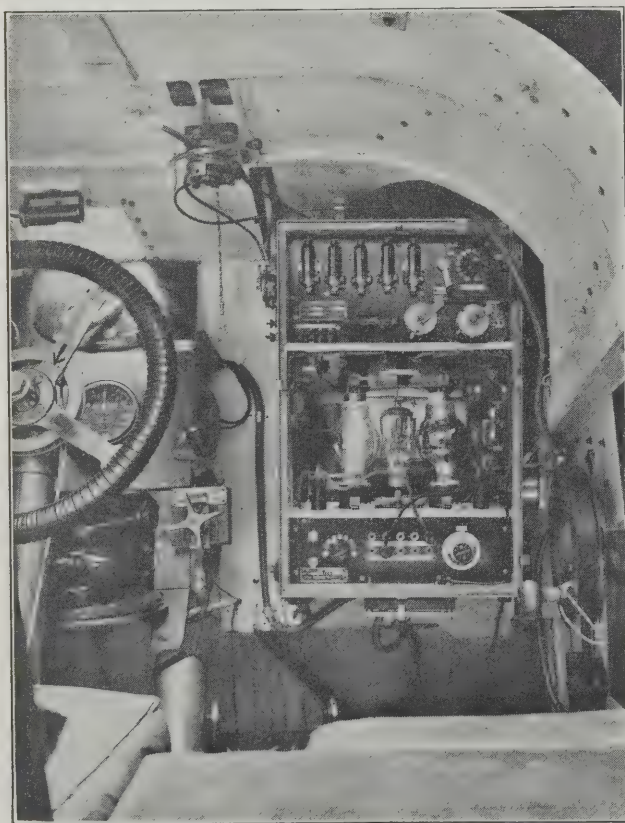
The importance of adequate communication between commercial aircraft in the air and the ground organisation upon which all aircraft ultimately depend is now generally realised. On the Cairo-Karachi Air Line which is to open early in 1927, the importance of such intercommunication is if anything greater than it is on the European air lines.

The only practicable method of providing such intercommunication is by means of wireless telegraphy or telephony, and in equipping the new air line advantage of the experience already gained in the Continental services of Imperial Airways has been used.

A complete chain of Marconi aerodrome ground stations is being provided along the whole route by the Air Ministry, and the D.H.66 machines to be used on the route are all fitted with the Marconi 150 watt A.D.6 Telephone-Telegraph equipment. This is of the same type as that now in service on other Imperial Airways machines, but modifications and improvements have been made to suit the new conditions.

Hitherto it has been customary to fit aircraft with two separate windmill-driven generators, one supplying power for lighting purposes and the other giving both high and low tension supplies exclusively for wireless purposes. On the D.H.66 one generator alone is used to supply power for both purposes, and this generator is driven by a new type of automatic constant-speed windmill which will maintain the generator voltage constant at any air speed between 60 and 130 m.p.h.

In the event of a forced landing this dual purpose generator



A Marconi A.D.6 Transmitting and Receiving set. This is shown installed in a Handley Page Hampstead belonging to Imperial Airways Ltd. The control switches may be seen above and to the right of the control wheel.

difference between the French and British stress requirements should not account for any serious difference in structure-weight between machines of the two countries. This opinion does not seem to square with the facts. French wings, in high performance machines, are probably a little heavier than British wings for similar machines. On the other hand French fuselages and tail units certainly look a lot less substantial than corresponding British organs, and over-all one believes that the French gain on total structure weight.

As a result they are able either to carry a larger disposable load on the same power-loading and performance, or the same disposable load with a lower power-loading and a better performance. As against this British machines are distinctly more robust than the average of French machines and will pretty certainly give better service under arduous conditions.

(To be continued.)

may be driven as a motor-generator from the battery used in the lighting system, to supply power to the wireless transmitter. In addition, this generator may be coupled to the Bristol gas-starter engine which is carried, thus making it possible to maintain communication over longer periods than the limited battery capacity would allow.

The A.D.6 aircraft equipment, which is illustrated as fitted in the Handley Page Hampstead is a combined transmitting and receiving set which is normally completely enclosed, and can be fitted in any convenient position in the aircraft. It is controlled from the cockpit by a compact system of switches, and only needs attention other than operation of these switches, if repairs or replacements become necessary.

IMPERIAL AIR COMMUNICATIONS.

[The Approach Towards a System of Imperial Air Communications, by the Secretary of State for Air. 91 pp. and 25 maps. H.M. Stationery Office. 5s. net.]

The Air Ministry has published in the form of a Blue Book the Memorandum by the Secretary of State for Air laid before the Imperial Conference, 1926, together with the Report of the Imperial Air Communications Special Sub-Committee.

The Memorandum contains a comprehensive review of the civil air activities of the whole world and is illustrated by a large number of maps and diagrams.

The section dealing with the approach towards a system of Imperial Air Communications covers the rise of aeroplane transport from 1920 to 1926, the first Imperial Aeroplane Services, the progress towards the establishment of Imperial Airship Services and the future of Imperial Transport.

In his foreword to the publication, the Secretary of State for Air says:—"Intensive concentration upon technical research and development, and upon the study of meteorology, has greatly strengthened the foundations upon which future progress can be achieved."

The publication is a useful record of progress up to the present time, and the maps are excellent

THE NEXT AERO SHOW IN PRAGUE.

The Aeroklub Republiky Ceskoslovenske, otherwise the Aero-Club of the Czecho-Slovak Republic, intimates that its Fourth International Aeronautical Exhibition will be held in Prague from June 4 to June 16, 1927, under the auspices of the President of the Czecho-Slovak Republic.

Remembering the success of previous Aero Shows in Prague, and the number of visitors who have been attracted there from all the Central and Northern European countries, it is to be hoped that the British Aircraft Industry will make a co-operative effort so that British aircraft may be adequately represented.

A SPANISH WEST AFRICAN FLIGHT.

On Dec. 10 a flight of three Dornier Wal flying boats (Rolls-Royce engines) left Melilla to fly to Fernando Po, Spanish West Africa. Major Rafael Llorente is in command of the flight, and Capt. Antonio Llorente and Ignacio Jimenez are the pilots of the other two boats. Each machine carries three officers and one mechanic.

The flight will be carried out in nine stages as follows:—Melilla—Casablanca—Las Palmas—Port Etienne—Dakar—Konakri—Monrovia—Grand Bassam—Lagos—Fernando Po.

On Dec. 12 the three boats left Casablanca at 08.17 hours and arrived at Las Palmas at 16.00 hours.

WHAT'S IN A NAME?

Capt. Pelletier Doisy, the well-known French aviator and Rugby player, has recently won an action against a distiller who named an *apéritif* "Pivolo," the pilot's popular nickname.

Pivolo was awarded 10,000 francs damages and the defendant was ordered to remove his name from all prospectuses and advertisements under a penalty of 200 francs for each contravention.

THE FLYING CLUBS.

The London Aeroplane Club.

Report for week ending Dec. 18.

Total flying time 20 hrs. 30 mins. There were three blank days owing to fog and rain.

The following members received flying instruction:—J. J. Hofer, H. R. Presland, J. E. Sawyer, E. R. Wilson, M. P. Susman, H. Solomon, J. G. Crammond, A. J. Richardson, B. Roxburgh Smith, A. J. Lingard.

The following had solo flights:—C. E. Murrell, H. Spooner, Lady Bailey, S. O. Bradshaw, N. Jones, L. J. C. Mitchell, J. H. Saffery, G. Terrell, G. C. Bonner, A. R. Ogston, O. J. Tapper, K. V. Wright. The following members had joy-rides:—J. J. Hofer, Miss Wilson, Miss Morris.

The Club will be closed down for one week from Thursday, Dec. 23.

The Lancashire Aero Club.

Report for week ending Dec. 18.

Total flying time for week 9 hrs. 30 mins., made up as follows:—

Dual with Mr. Brown:—Messrs. Wade 1 hr. 20 mins., Crosthwaite 50 mins., Birley 40 mins., Leigh 35 mins., Hughes 30 mins., McNair 25 mins., Fallon 25 mins., Miss Emery 25 mins., Messrs. Newton and Harper 20 mins. each, Hargreaves, Dobson, Anderson and Nelson 15 mins. each, Costa 10 mins. Solo:—Messrs. Lacayo 45 mins., Costa 15 mins., Goodfellow and Dobson 10 mins. each. Joy-ride:—With Mr. Costa, Mr. Torres 20 mins. Tests:—50 mins.

There is really nothing amusing to record, unless one includes the fact that Mr. Dobson, our Mono engine expert, went solo on Wednesday. On the same day our chairman set off Helvellyn-wards on his super-Gosport, but had to turn back at Windermere on account of weather conditions. He got back to Woodford safely through a mixture of fog and snow-storm, which was quite a stout effort. In fact, it deserves another little parody, thus:—

John had
Great big
Oversize
Wheels on
John had a
Great big
O-le-
O.John had a
Wonderfull
Radial
Engine—
So "off"
(said John)
"We go."

I have been challenged to say anything original this week about our deplorable weather. As it is practically the sole topic of conversation among our members it is obvious that the only original thing left to say about it is nothing, which I propose to say accordingly.

A Happy Christmas and Good Landings to Everybody.

The Newcastle-upon-Tyne Aero Club.

Report for week ending Dec. 19.

Total time flown 8 hrs. 40 mins. Dual 4 hrs. 25 mins. Solo 1 hrs. 5 mins. Passenger 10 mins.

The following members flew under instruction:—Messrs. M. Kennedy, A. Bell, R. Stawart, Turnbull, H. Ellis, Miesgaes.

Mr. J. D. Irving and Mr. D. Mathews flew solo during the week.

The following members flew with passengers:—Mr. R. N. Thompson with Mr. Percy, Mr. C. Thompson with Mrs. Heslop, Dr. H. L. B. Dixon with Mr. F. H. Phillips, and Mr. R. N. Thompson with Mr. and Mrs. Willis.

Mr. Irving successfully passed the tests for his Aviator's Certificate on Saturday, in spite of a very strong and gusty wind.

Flying was possible only on Monday, Saturday and Sunday, owing to gales on the remaining days of the week.

On Friday, Mr. Ellis with Mr. Heppell as passenger brought up a new Renault Avro from Witney to Sherburn, completing the journey to Cramlington on Saturday. Unfortunately the Renault developed trouble during the last mile of the journey and it could not be put on service on Sunday.

G-EBLX (Moth), the only machine on service for training at present, had engine trouble on Sunday morning, a broken piston causing Mr. Parkinson to execute a very difficult forced landing while flying with Mr. Kennedy, who was under instruction at the time. The engine cut out just after leaving the aerodrome and it was only through Mr. Parkinson's skill that the machine was undamaged.

The Moth and the Avro should be both on service for the Holidays.

The aerodrome will be closed down on Christmas and New Year's Day only. Flying will be as usual on other days.

The Midland Aero Club Ltd.

Report for week ending Dec. 17.

Total flying time 1 hr. 30 mins.

The meteorological people having enveloped the aerodrome in a fog of the best quality, complete with particles of carbon, flying has been practically nil.

Messrs. J. Brinton and G. V. Perry made solo flights.

The Club will be closed down during the Christmas Holidays, from Dec. 23, to Wednesday, Dec. 29.

The Yorkshire Aeroplane Club.

Report for week ending Dec. 17.

Total time flown was only 2 hrs. 55 mins., arrived at as follows:—

Solo 1 hr. 55 mins. Dual 40 mins. Test 10 mins., and a joy-ride given by Mr. Carter 10 mins.

Messrs. Dawson, Mann, Watson and Wood flew solo, and Mr. Lax and Miss Woodhead received dual instruction.

On Saturday, 11th, the first Aerial Commercial Traveller made his appearance at the aerodrome when Messrs. C. P. B. Ogilvie and J. P. C. Phillips took us by storm in their Avro G-EBSB. They had set out from Birmingham a few days previously and had since been touring the country calling at the principal towns en route for the purpose of taking orders for the "Tellus" Super-Vacuum Cleaner, a sample of which was carried in the machine. Mr. Phillips informed us that one of the other Clubs had been extravagant enough to purchase one for cleaning out the interior of their Moths, but in spite of all the merits he claimed for this elaborate apparatus we refused to take the bait by following their example.

Perhaps if he would arrange to call next time with a cheap line

CELLULOSE ACETATE

"NOVELLON"
DOPES AND VARNISHES

SUPREME

For tautening, weather-proofing; also petrol and castor-oil proof

- - - FIRE RESISTING - - -
- DO NOT DETERIORATE IN STORE -

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TO AUSTRALIA, AND R.34 AIRSHIP TO AMERICA AND BACK.

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Works: Spondon, near Derby.

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Willesden Green, N.W.10.

Telephone: Willesden 1619 and 2380.

The SUPERMARINE "SOUTHAMPTON" TWIN-ENGINE FLYING BOAT (Two Napier-Lion Engines.)



THE
SUPERMARINE AVIATION WORKS, LTD.
REGISTERED OFFICES AND WORKS
SOUTHAMPTON,
ENGLAND

23rd Sept. 1926.

Messrs. Cellon (Richmond) Ltd.,
Petersham Road,
Richmond, SURREY.

Dear Sirs, Flight of "Southampton" Flying Boats
to Egypt and back

Since the return of the two "Southampton" type machines which recently carried out a very successful flight to Egypt and back, we have had an opportunity of examining the condition of these machines after their strenuous service in very varying atmospheric conditions.

We feel sure you will be both interested and pleased to know that the condition of the fabric on both machines is in first-class order, its original toughness being still retained, which is a proof of the excellence of your dope as these machines were never placed under cover from the time they left England until they returned and at all stopping places were moored out in the open under constantly varying conditions.

We enclose herewith a copy of the official report of this flight, and the results are a still further testimony to the excellence of the dope with which you supply us and which we use on all our machines.

Yours faithfully,
For and on behalf of
THE SUPERMARINE AVIATION WORKS LTD.
James Bird
Managing Director.

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C 9

in Super-Rat-traps we would consider giving him an order for some. It would certainly be a case of money well spent, some bags of flour used in the Bomb-dropping Competition at our last Pageant having been partially consumed by these pests during a recent week-end!

After four days' stay, the travellers left us for Manston, in Kent, calling at Leeds on their way to complete some business.

Our next visitor was an S.E.5 (G-EBPD), piloted by a Mr. Atcherley, who had flown over from York on the Monday. He had intended leaving again the same afternoon, but because of fog was obliged to wait until the next morning.

On Friday another Avro landed here, Mr. Baxter Ellis of the Newcastle Club with Mr. Heppell, their Chairman, having come from Witney (Oxon). The machine, which was fitted with a Renault engine, has been bought from the Berkshire Aviation Company for the Club's use. R. O. L.

The Hampshire Aeroplane Club.

Report for week ending Dec. 16.

Total flying time for the week 8 hrs. 40 mins.

Instruction flying 6 hrs. 40 mins. Solo flying 1 hr. 20 mins. Test flight for visibility, etc. 40 mins.

The following members had instruction:—Lieut. Heinemann, R.N., 1 hr. 25 mins., Cooper 1 hr. 10 mins., Moloney 40 mins., the Hon. H. R. Grosvenor 40 mins., Everett 50 mins., Dickson 25 mins., Shepherd 20 mins., Stokes 15 mins., Nicholson 15 mins., Kerry 10 mins., Keeping 10 mins., Barry 10 mins., Preston 10 mins.

The soloists were:—Lieut. Graham, R.N., 35 mins., Preston 25 mins., Perfect 10 mins., Keeping 10 mins.

Morning mist has been a nuisance several times this week, and in consequence, we are thinking of adopting the Lancashire Club's test for visibility and would appreciate the loan of the telescope and half-crown which they used for that purpose.

We have a perfectly good Scotsman in the person of McCracken who could be relied upon to do the observing of the coin.

There is one slight drawback to this test as applied to the Hampshire Club, in that our instructor also hails from north of the Tweed and therefore it may be difficult to induce him to leave the ground in case he should lose sight of the half-crown.

To enable the Staff of this Club to enjoy a well-earned rest, the premises will be closed from Thursday, Dec. 23, to Wednesday, Dec. 29, inclusive.

[NOTE.—Owing to an Editorial Error Mr. Simmonds was credited with being the first Club Secretary to qualify for an "A" Licence. As a matter of fact (not "of course," as a daily paper would doubtless say) Mr. Simmonds is the Chairman of the Hampshire Club's Committee. The Secretary, and a hard-working and highly efficient one at that, is Mr. Perfect, who, though an accomplished soloist, has not yet reached the "A" in alt.—C. G. G.]

The Australian Aero Club.

(NEW SOUTH WALES SECTION.)

Report for week ending Oct. 30.

Total flying 21 hrs. 50 mins. Number of flights 77. Dual Instruction 1 hr. 5 mins. Pupils' solo flying 11 hrs. 55 mins. Pilot members' flying 5 hrs. 40 mins. Pupils under instruction 10. Pilot members 7.

Pupil members' dual:—J. R. Palmer 45 mins., C. W. Perry 10 mins., G. Littlejohn 10 mins.

Pupil members' solo:—M. Rosenfeld 2 hrs. 30 mins., E. B. Wilshire 1 hr. 35 mins., N. F. Stewart 1 hr. 30 mins., M. C. Kent 1 hr. 20 mins., J. R. Palmer 1 hr. 20 mins., J. T. Reid 1 hr. 10 mins., C. W. Perry 30 mins., S. Arouseau 45 mins., L. G. Carrick 45 mins., G. Littlejohn 10 mins.

Pilot members' flying for week:—H. Hammond 1 hr. 30 mins., R. King 1 hr. 20 mins., S. L. Tyler 55 mins., G. F. Hughes 35 mins., R. H. Boyden 35 mins., H. Ross 30 mins., R. W. Reid 15 mins.

A GOOD BEGINNING.—The Club has just completed the first three months of its actual flying operations and if the results of this period are any indication, the future of the Club's work is indeed promising. Naturally this first period was largely taken up with organisation and there have been the inevitable minor troubles and problems which are inseparable from any new venture. But the process of acceleration has been rapid so that the Club has fully reached "flying speed" and, given reasonable luck its progress should be even more rapid from now on.

The record of our first three months' flying will certainly bear comparison with that of any similar Flying Club in England, and actually exceeds the record of the London Aeroplane Club. In our first three months our Moths have made 960 flights, totalling 3063 hours' flying and nine pupils have actually passed all their tests for "A" Licence.

In addition to these, five other pupils are flying solo and will shortly be ready for their tests. Ten pilot members are regularly flying on Club machines and a number of others are waiting to begin. At the end of the first flying year of the London Aeroplane Club 19 pupils had gained their "A" Licences in 1,200 hours' flying.

Very great credit is due to our able instructor for these results and with improved organisation he hopes for even a better record in the future. The only accident during training to date was a very minor one due to a faulty axle breaking on a heavy landing. The quality of the flying of the newly-fledged pilots is uniformly good and in every case they promise with experience to develop into sound and reliable pilots.

The average dual instruction before first solo was 6 hrs. 51 mins. and the average total dual and solo flying before licence test were respectively 8 hrs. 40 mins. and 6 hrs. 45 mins. These figures are extremely good considering the fact that the instruction was inevitably lacking continuity, and will compare more than favourably with any flying school.

The quality of the pupils was no small factor in these results, and in a very comprehensive and able report on the first course of flying training our instructor points out that the pupils were extraordinarily keen and yet not over-confident. The success of his first batch of pupils, who were not selected in any way but were accepted for training subject only to medical fitness, is evidence of the fact that Australians are on the whole naturally endowed with the flying

temperament. While these results reflect great credit on those concerned, both instructor and pupils, they will serve only as an incentive to greater efforts and better organisation so that even more may be accomplished next time.

The Controller of Civil Aviation, who flew to Sydney with Capt. E. J. Jones, M.C., D.F.C., to test the pupils, is also to be congratulated on the justification of his faith in the usefulness and certain success of the Flying Club scheme. He can go right ahead with his plans for the extension of the Flying Clubs throughout Australia with his faith backed up by practical results. The support and encouragement he has given to this Club will be repaid with redoubled efforts to make the scheme a success and our experience and figures will always be available to assist any new Clubs that may be started in other centres.

Capt. E. J. Jones, M.C., D.F.C., examined eight candidates for Pilot's Licence "A" on Oct. 30 and 31 and Nov. 1. All the candidates who went for the tests passed. Our new Club trained pilot members are:—Mr. E. B. Wilshire, Mr. R. H. Mitchell, Mr. M. Rosenfeld, Mr. L. G. Carrick, Mr. M. C. Kent, Mr. N. F. Stewart, Mr. S. H. Auroseau, and Mr. J. T. Reid.

The following letter has been received from the Controller of Civil Aviation:—

Dear Sir,—With reference to the pupils who were recently presented by your Club for examination for Private Pilots' Licences, I have to advise that the report submitted by the examining officer is exceedingly satisfactory and indicates that the flying instruction has been thoroughly and conscientiously carried out.

It is very gratifying to find that this state of affairs exists in the early stages of your operations and the foundations laid should do much to ensure not only continuance of success but also an increase in the activities of your organisation.

(Signed) H. C. BRINSMEAD, Controller of Civil Aviation.

DINNER TO CAPT. E. W. LEGGATT, M.C.—On Wednesday, Nov. 3, at the Hotel Australia, the Pupil Members of the first course of instruction entertained Capt. E. W. Leggatt, M.C., at dinner. The gathering was a most enjoyable one, particularly as eight of the company had just passed their licence tests. Glowing tributes to the skill and patience of our instructor were paid by all the members present and Capt. Leggatt was presented with an engraved gold wristlet watch as a souvenir. Our engineer, Mr. R. E. Beeston, was also presented with a suit case.

The fuel was good and, with all engines giving full revs., flying speed was kept up throughout the evening. In some instances Air Navigation Regulations were somewhat bent, but there was only one really heavy landing. Great sympathy was shown to the unfortunate new pilot who crashed late in the evening and the floral tributes of his comrades were most touching. It was a fine exhibition for so young a pilot to find his way home in so dense a fog!

[Capt. Leggatt has thanked his pupils publicly and gracefully in a letter to the *Fly Paper*, the organ of the Club.]

£500 FROM THE FLYING BALL.—At the final meeting of the Flying Ball Committee on Wednesday, Nov. 10, the Honorary Treasurer, Mrs. R. W. Perkins, presented the balance-sheet, which showed a profit of £518 5s. 7d. A cheque for this amount was handed over to the President of the Club, who expressed the gratitude of the Club to the ladies who had so ably organised the Ball and told them that their splendid effort had placed the Club in a position to acquire another aeroplane. After the meeting the ladies of the Committee were entertained at tea.

It was resolved that the Ball be an annual function and that the date of the next Flying Ball will be Tuesday, Aug. 16, 1927.

SUNDAY FLYING.—In view of the number of pilot members now waiting to fly at week-ends the Committee has decided that machines will be available for use of members from 10 a.m. on Sundays provided an experienced pilot duly authorised by the Committee is present.

PASSENGERS IN CLUB MACHINES.—The Committee has decided that pupils who gain their "A" Licence will not be allowed to carry friends as passengers until they have had at least 40 hours' solo flying experience.

COMMERCIAL AERONAUTICS.

[Owing to this paper going to press a day earlier than usual, because of the Christmas Holidays, no table of aircraft movements is available.—ED.]

Croydon and General Notes.

The chief event of the week was the departure on Saturday morning of the De Havilland Hercules (3 Bristol Jupiters) for Cairo. The machine was piloted by Mr. C. F. Wolley Dod, chief pilot of the Cairo-Karachi service. Mr. Howard travelled as spare pilot. The passengers were Sir Sefton Brancker, Air Commodore and Mrs. J. G. Weir, and Mr. Tony Gladstone. A start was made at 07.30 a.m., and Paris was reached in 1 hr. 35 mins.

There must have been very considerable delay after this as Lyon was reached too late to allow the machine to reach Marseilles before dark. The Hercules got to Marseilles on Sunday, and there further progress was stopped by bad weather.

A second machine started on Monday morning, piloted by Mr. Hinchliffe, with Mr. Warner and Mr. Dudley Travers as second and third pilots.

The machine carrying Sir Samuel and the Lady Maud Hoare will leave Croydon on Boxing Day, piloted by Mr. F. L. Barnard.

The regular service from Cairo to Basra will begin on Jan. 1, and on April 1 it will be extended to Karachi.



Supermarine "Southampton" Twin Engined Flying Boat.

(TWO 450 H.P. NAPIER LION ENGINES.)

AS AN EXAMPLE OF WIDE RANGE OF DESIGN. CONTRAST THE ABOVE TWIN ENGINE MACHINE WITH THE SUPERMARINE NAPIER S4 MONOPLANE DESIGNED AND CONSTRUCTED FOR THE SCHNEIDER CUP RACE, 1925.

SUPERMARINE

ENGLAND.

One is inclined to think that it will not be a complete success until one can go the whole way from England to India by air. The chief difficulty, one is told, is that the part from Marseilles to Alexandria must be a flying-boat route, and it is said that there is not a commercial flying-boat in existence.

One is inclined to think that if a Supermarine Southampton were fitted up as a commercial machine, the ideal boat for the job would then exist, for, one is told by experts that the Service Southampton does in fact lift a bigger "useful load" than any wheeled machine.

Presumably the Short Calcutta (three Jupiters) which is now being built is intended for some such job, but it is likely to be some time before the type is ready to run a service.

Three engined aircraft have again been in trouble this week. On Thursday an inward-bound German Junkers had one engine put out of action owing to the breaking of a water connection. The Junkers do not seem to be able to fly on two engines, and so a landing was made at the back of Folkestone. The passengers continued their journey to London by train.

An Argosy bound for Cologne had one engine go dead when many miles from Cologne. It was found on this occasion that, although there was a full load on board, the Argosy maintained her height and, in fact, could actually gain height on two engines. The machine was able to make Cologne with ease.

There was an unfortunate accident at Croydon on Friday. Herr Karl Walther, a German mechanic, was starting up one engine of a Junkers, and, when pulling the airscrew over he slipped. The engine started with the pull, and the mechanic fell into it and had his skull split open. He was taken to Purley Hospital, where he died an hour later.

On Sunday the 6 h.p. A.N.E.C. monoplane, which has been at Croydon for some time, was careering wildly about the grass. One watched it for some time from the middle of an active police trap on Purley Way, but it did not get off the ground. However, it seemed to stir the ambulance and fire engine into a wild state of activity.

In case Imperial Airways, Ltd., are considering any further night-flying experiments, they might do well to engage Mr. Dudley Watt, who seems to be quite skilful at this form of amusement. On a recent night he flew from Gosport to Upavon on the Sopwith Swallow to keep a dinner engagement. Now the Swallow is about the last machine on which

one would care to do night-flying, but that sort of feeling does not enter into the mind of "Dangerous Dan."

He followed Southampton Water up as far as Southampton, and then followed the railway until he saw the lights of Winchester. He then cut across to Upavon via the lights of Andover. On arrival at Upavon Mr. Watt says that he "just flew down with his engine on until he felt the ground and then switched off!" This should remove all doubts from the minds of those who may doubt Mr. Watt's skill as a pilot.

Mr. Bailey, who runs the weekly Southampton-Guernsey service, lost his machine in curious circumstances on Tuesday night. He moored the Sea Eagle inside St. Peter Port in its usual position overnight. When he came down in the morning to take it back to Southampton it had disappeared. On fishing about in the harbour he found it on the bottom, having been cut in halves by a ship that had passed in the night. Capt. Lamplugh of the Insurance Company was cross.

Mr. Horsey, when returning from Cologne last week in a W8b, saw the curious and rare phenomenon of a mock sun. That is to say, he saw two perfect and complete suns in the sky at the same time. This phenomenon is very rarely seen except in Polar regions. The pilot points out that the sun was the only thing which he saw double, so that there can be no doubt about the existence of the phenomenon.—G. D.

PERSONAL NOTICES.

DEATH.

BAILEY.—On Dec. 15, at Letchworth, Herts, Phyllis, wife of Sq. Ldr. George Cyril Bailey, D.S.O., R.A.F.

MARRIAGE.

HASLAM—CUTHBERT.—On Dec. 15, at St. Mary's Church, Headley, James Alexander Gordon Haslam, M.C., D.F.C., R.A.F., to Helen Kinnear, daughter of the late W. M. Cuthbert, of Cape Town, and of Lady Seymour-Lloyd, and step-daughter of Sir John Seymour-Lloyd, K.C., of Headley Grove, Headley, Surrey.

FORTHCOMING MARRIAGE.

BLACKER—PEEL.—A marriage has been arranged, and will take place in February, between Major L. V. S. Blacker, The Guides, eldest son of Major Latham Blacker, late Royal Artillery, and Mrs. Blacker, and the Hon. Doris Peel, daughter of Viscount and Viscountess Peel.

BIRTHS.

BIRKBECK.—On Dec. 16, to Mary Neville (née Moxon), wife of Flt. Lt. Birkbeck R.A.F.—a son.

BROOKE-POPHAM.—On Dec. 15, at 27, Welbeck Street, London, to Opal, wife of Air Vice-Marshal Brooke-Popham—a daughter.

MISCELLANEOUS ADVERTISEMENTS.

SPECIAL PREPAID RATE: 18 words 2/-; Situations Wanted ONLY, 18 words 1/-; 1d. per word after. **TRADE ADVERTISEMENTS** in these Columns, 3 lines 5/-; 1/- per line after. Public Announcements, Legal Notices, Auctions, Contracts, etc., 2/- per line. For the convenience of Advertisers, replies can be received at the offices of "THE AEROPLANE," 14, Bream's Buildings, E.C.4.

EMPLOYMENT.

Aeronautical Employers and those seeking Aircraft Employment should communicate with Capt. F. Warren-Merriam, A.F.C., A.F.R.Ae.S., Aeronautical Consultant, who has established an Employment Bureau at 64, Victoria Street, S.W.1. 'Phone: Victoria 8428. Special Register for Pilots and Ground Engineers.

FOR SALE.

MODEL PETROLMOTOR CASTINGS.—Half horse-power. Cylinders bored free. 9s. 9d. set. List 3d. Butler's Stores, Littleover, Derby.

SITUATION VACANT.

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THE AEROPLANE

INCORPORATING AERONAUTICAL ENGINEERING

Edited by
C. G. GREGG

Vol. XXXI. No. 26.

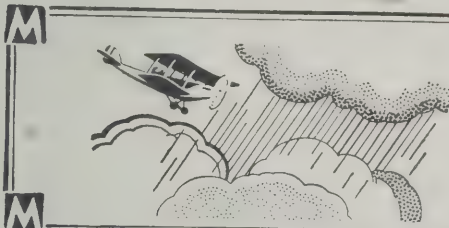
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A FLEET AIR ARM CHRISTMAS.



SHANGHAIED:—H.M.S. *Vindictive*, officially rated as a "Light Cruiser fitted as Aircraft Carrier." She is being used for catapult experiments. The R.A.F. unit on board is No. 401 (Fleet Fighter) Flight, R.A.F., equipped with Fairey Flycatchers (Jaguar engines) on floats and IIIDs. (Napier engines)—An interesting public photograph of a secret ship with secret equipment at a secret place on secret war-duty. Admiralty Intelligence, please note.



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Incorporating
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ON OUR LONG-SUFFERING READERS.

This being the last issue of THE AEROPLANE for the year 1926 it behoves one to show some appreciation of all that the readers of this paper have done for it during the past twelve months. Despite, or perhaps because of, the fact that THE AEROPLANE is run on lines entirely different from those of any other paper of one's acquaintance, it seems not only to meet with the approval of its readers but actually to inspire them with a kind of exasperated affection.

If one may judge by the stacks of Christmas cards and kindly greetings which have reached the office from all parts of the World it would seem that THE AEROPLANE is regarded rather as a person than as a thing. And the fact that, in spite of our best endeavours to keep the paper on the Secret List as it were, the circulation has insisted on going up by something like a thousand copies a week in the course of 1926, seems to indicate that for some reason THE AEROPLANE is a *persona grata*.

This curious personal interest which the readers seem to take in the paper is, when one comes to think of it, a very high tribute to the Staff of THE AEROPLANE. Probably the explanation is that all members of the Staff are, unlike trained journalists, intensely keen on their own subjects.

The trained journalist, at any rate of the type which newspaper editors seem most to desire, seems to be an entirely disillusioned unenthusiastic person who is prepared to write with equal inaccuracy on any subject under the sun when his tap is turned on by the editor. He is rather like one of those conjurors' bottles which pour out liquor of any desired flavour (alleged) at the bidding of the conjuror.

The members of the Staff of THE AEROPLANE, on the contrary, in spite of having been entirely concerned since their early youth with the desolating occupation of making a living out of aviation, still manage to retain their enthusiasm. Each is as keen as ever on instructing and amusing the readers of the paper in his or her special subject. And not one is a professional journalist. Each has been brought up to some other, and respectable, trade, and so all have some knowledge of facts about some subject or other.

If there is one thing more than another which all we people on the Staff of THE AEROPLANE appreciate, it is the good wishes which we have received from R.A.F. units all over the World, ashore and afloat. The object which we have all placed first and foremost in our work is the welfare of the R.A.F. We have always tried to make THE AEROPLANE the unofficial organ of the Air Force.

These Christmas messages from all over the World prove that we have met with the success for which we hoped. One therefore takes this opportunity of expressing one's gratitude to all those unknown friends in the R.A.F. who so evidently appreciate our efforts in their interests.

The Aircraft Industry also has been very kind in its Christmas greetings. One is painfully aware that every now and then criticisms which appear in THE AEROPLANE of British business methods and British designs get people in the Trade very much on the raw. But, happily, the great majority of the people in the Trade are big enough to realise that criticism is a tonic and that praise is enervating.

Not long ago one very well-known manufacturer to whom one had written some distinctly unkind criticism replied, on the coals of fire principle, "Your criticisms are always welcome. We ought always to fear those who speak too well of us," and added the quotation from St. Luke, VI. 26, "Woe unto you when all men shall speak well of you."

And as a corollary one of his colleagues produced a proverb from Doctor Thomas Fuller's *Gnomologie* of 1732, "He is not good himself who speaks well of everybody alike."

As Phædrus remarks in one of his fables, "The name of friend is common, but truth in friendship is rare." Therefore one claims that as friendly critics of the Aircraft Industry the Staff of THE AEROPLANE can do more good to the Trade than could ever be done merely by unmitigated praise, or as our American brethren say, "just handing out taffy." And one is glad to find that so many people in the Trade agree with this point of view.

Another section of the readers of THE AEROPLANE which one particularly wishes to thank for their appreciation is



OUT INTO THE WEST.—New York Water Front, with Mr. Kenneth Walton's De Havilland Moth (Cirrus engine), the first British light aeroplane to go to America, being towed ashore in New York Harbour on Nov. 25, after Sir Alan Cobham had failed to get it off the water, when lowered from the steamer which brought it to America.

composed of the Flying Club people. The kindly things which have been said, or rather written, by those valued officials of the Flying Clubs who contribute to THE AEROPLANE the weekly reports of the doings of the Clubs, have been most gratifying. They show that the amount of space which is devoted to the Flying Clubs each week in THE AEROPLANE is appreciated.

As one has stated in this paper on several occasions, one regards the Flying Clubs as being the basis on which private civilian flying as distinct from commercial flying will be built up in the future. If one had not had such faith in the Club movement one would not have devoted to the doings of the Clubs, which may seem trivial to some of our high-browed scientists or very superior Service people, an amount of space every week which might very well have been occupied by scientific formulæ or descriptions of new foreign aircraft, or news of the Royal Air Force.

One is convinced that from the Flying Clubs will eventually grow a great class of owner-pilots, who on the one hand will some day be good human material for the Royal Air Force, and on the other hand will provide business for the Aircraft Industry, but whose chief function in the scheme of things will be to promote air-mindedness among the British Public and so make easier the task of those who have to

extract from an unwilling Treasury enough money to build up an adequate Air Force and to organise Imperial air routes.

One only hopes that in time to come the Club movement will grow to such an extent that the doings of Clubs and owner pilots will occupy many pages each week in THE AEROPLANE. This week they occupy no space at all, because of Christmas Holidays.

The most sincere desire of the Staff of THE AEROPLANE is to maintain the interest of all readers of the paper and to increase that friendly feeling which already exists. That means that THE AEROPLANE must go on improving.

The only way in which the Staff can improve the paper is by learning what does and what does not interest the readers. And to that end one would earnestly ask any reader who feels called upon to criticise anything which appears in THE AEROPLANE to send in his or her criticism without delay, and to express that criticism without regard to the feelings of the Staff of this paper.

Once again, on behalf of all the members of the Staff, one thanks all the readers of this paper for their good wishes and the friendly interest which they have shown. May 1927 be a year of prosperity to all of us who are concerned with flying.—C. G. G.

THE S.O.S. TO INDIA.

On Monday, Dec. 27—the official date for the Boxing Day Bank Holiday—the Rt. Hon. Sir Samuel Hoare, Bart., Secretary of State for Air (known for short among the Aeronautical community as the S.O.S.), the Lady Maud Hoare, his wife, and sundry others, left Croydon Aerodrome in a D.H. Hercules (Bristol Jupiter engines) for India.

One imagines that few if any of one's readers have ever been up at such an hour of the morning at this time of the year so one must explain that it was pitch dark and very cold.

One is very silly ever to get up at 06.30, but to do it on a Bank Holiday is sheer madness. And when that Bank Holiday is Boxing Day, a day on which one is supposed to be recovering from the effects of Christmas, then the act is sure and positive lunacy.

At any rate the Morris Oxford-and-Asquith thought so when its cold sleep was rudely disturbed. And it was quite sure of it when it had to have its headlamps lit in the morning.

On arriving at Croydon at 07.00 hrs., one was amazed to find dozens of cars already there, and scores of people, although it was too dark at first to see who they all were. The de Havilland Hercules was standing out on the tarmac and the Bristol Jupiter engines were being started up.

Mr. F. L. Barnard, who will take the machine as far as Cairo, appeared in the beam from a car headlamp. He informed one that he would probably be spending an old-fashioned Christmas later in the day, as the weather reports predicted heavy snow south of Dijon.

The most lunatic of all the mad people who were at Croy-

don at this unheard-of hour were Mr. Roy Fedden, his stepson and a friend, all of whom had started from Bristol by road at 03.40 that morning, and arrived at Croydon at 07.10. Mr. Fedden is the creator of the Bristol Jupiter engines and the keenness displayed by motoring up 130 miles at that hour of the year indicates one reason why the Jupiter is the most successful air-cooled engine of its class in the world.

The first really sane person one encountered was Mr. Jeffs, assistant C.A.T.O., and an ever-present help in time of trouble. Mr. Jeffs at once guided one to a spot where Imperial Airways Ltd. had conceived the sensible idea of issuing hot coffee and rum to all the lunatics present.

Just before 07.30 hrs. Sir Samuel and the Lady Maud Hoare arrived, and after numerous flashlight photographs had been taken, they embarked in the Hercules. With them went Sir Geoffrey Salmond, who is thus making his second flight to India—where he is to command the R.A.F.

Mr. C. Llewellyn Bullock, private secretary to the S.O.S., was also on board. Sq. Ldr. E. L. Johnston, of R.33 renown, was the navigator, and Mr. Emmott, who flew with Mr. Cobham to the Cape and back, went as the official photographer. Mr. Mayer, of the Bristol Company, who wrote such a graphic account of the Bloodhound's trip to Cairo and back piloted by Lt.-Col. Minchin, went as engine-engineer, and Mr. Hatchett went as wireless engineer. Corporal Hetherington, R.A.F., as Sir Geoffrey Salmond's batman, completed the 10 passengers.

At 07.35 hours, just as daylight was beginning, Mr. Barnard



THE START FOR INDIA.—Left to right, Mr. F. L. Barnard (pilot), the Lady Maud Hoare, Sir Samuel Hoare, Sir Eric Geddes, Sir Samuel Insone, Mr. Llewellyn Bullock and Sir Vyell Vyvyan.

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THE FIRST PASSENGERS.—Left to right, Air Commodore J. G. Weir (R.A.F. Reserve), Mrs. J. G. Weir, Capt. T. A. Gladstone (of the Cairo-Kisumu Air Line), Air Vice-Marshal Sir William Sefton Brancker (Director of Civil Aviation) and Flg. Off. C. F. Wolley Dod (R.A.F. Reserve), Pilot. The personnel of the first De Havilland Hercules (D.H.66) (three Jupiter engines), which left Croydon on Saturday, Dec. 18, to fly to Cairo, where it becomes the first unit of the Imperial Airways fleet for the Cairo-Karachi section of the Great Imperial Air Route.

opened up the engines and took straight off over the new buildings and the machine disappeared to the South-East.

As the machine disappeared the day seemed to arrive quite suddenly and one was able to see who were the other brave people present. Air Chief-Marshal Sir Hugh Trenchard and Air Marshal Sir John Salmond represented the Royal Air Force. Imperial Airways Ltd. were represented by Sir Eric Geddes (smoking a cigar at that hour!) Air Vice-Marshal Sir Vyell Vyvyan, Sir Samuel Instone, and Major Mayo. Mr. and Mrs. Walker and Mr. Loader were there for the De Havilland Company.

Among others present were the Master of Sempill and the Hon. Mrs. Forbes Sempill (very pleased because she had got up the previous week to see another Hercules off!). In fact practically everyone of note in the aeronautical community was present, and all of them (like Winnie-the-Pooh whom one

is said to resemble in figure) going for fast thinking walks round the machine to keep warm. One congratulates them all, including oneself, for getting up and going to Croydon and one is sure that none of them regrets being present at what was a most impressive occasion.

Later we heard that the Hercules had passed over Le Bourget at 09.35 hrs., and had landed at Dijon at 11.35 hrs. Here there was a pause for lunch of more than an hour, and finally the party landed at Marseilles at 15.45 hrs.

Before the machine left Sir Samuel received the following telegram from H.M. the King.

The Queen and I wish you and Lady Maud *bon voyage* a successful visit and a safe return.

The flight will continue via Naples, Malta, Benghazi, Sol-lum, Aboukir (where Mr. Wolley Dod will take the machine over from Mr. Barnard) and Ziza to Baghdad. Here the party will be augmented by Sir Sefton Brancker, who, as is his custom, is wintering in the warmer parts of the Empire.

From Baghdad they will proceed via Bushire and Jask to Karachi. Hence after a rest they will go to Delhi. They will return by the same route to Cairo. Thence they will fly to Khartum where they will fly by Mr. Tony Gladstone's air line in the Pelican (D.H.50, Bristol Jupiter) to Kisumu and back. From Cairo they will return by surface transport to England.—G. D.

WITH BANJULELE TO BAGHDAD.

It is now possible to give a fuller account of the first part of the flight towards India undertaken by Mr. T. Neville Stack and Mr. B. S. Leete on two D.H. Moths (A.D.C. Cirrus II engines).

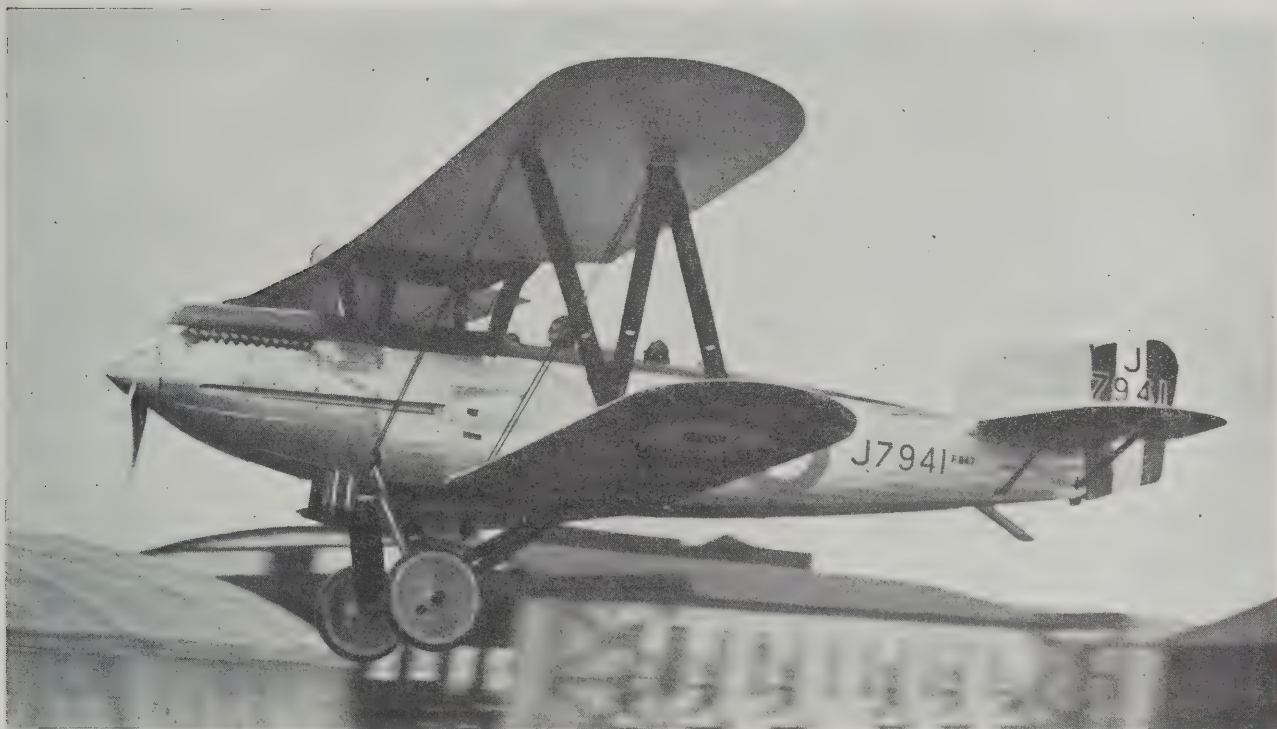
It will be remembered that they left Stag Lane on Nov. 19.

The following is the itinerary of their flight as far as Cairo, which is very illuminating:—

London—Paris:—Raining and bad visibility.



AN EGYPTIAN TRIUMPH.—Messrs. Leete (left) and Stack having flown on D.H. Moths (Cirrus engines), complete with banjulele, from London to Heliopolis, are given a triumph (in the Roman sense) by their former comrades of the R.A.F. Since then they have reached Baghdad and are continuing towards India.



"Flight" Photo.

An Impression of the FAIREY "FOX" day bomber.

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Paris—Lyons:—Storm, rain, and thunder. Landed in the dark at Lyons. The usual lighting apparatus had been put out of action by the storm.

Lyons—Marseilles:—Good trip. Rhône valley flooded offering no facilities for forced landings.

Marseilles—Pisa:—300 miles over Alps and sea in four hours. Pisa aerodrome flooded.

Pisa—Rome—Naples:—Good weather. Stayed in Naples two days.

Naples—Malta:—470 miles in 6½ hours. Visibility bad all the way, in spite of which Malta was hit in a direct line, thus showing excellent navigation. Stayed in Malta seven days owing to bad weather.

Malta—Homs:—Left Malta in bad weather, visibility bad with rain, low cloud, and N.W. wind. Escorted by R.A.F. seaplanes for 80 miles. Did not see African coast until 10 miles off and hit coast 1½ miles west of Homs, the objective; another example of extraordinarily fine navigation. Mr. Leete had five minutes' petrol-feed trouble which caused "certain uneasiness." No ship seen the whole way. Very hospitably received by the Italian Colonial Air Force.

Homs—Benghazi:—450 miles in approximately 6½ hours' continuous flying, 250 miles of which was over hostile country. Rain and high winds. Held up at Benghazi one day by bad weather.

Benghazi—Porto Bardia:—Very bad weather. Rain, storm and thunder. Both machines blown over. An Arab saved Stack's machine from going right over, and Stack saved Leete's machine from the same fate.

Porto Bardia—Cairo:—Strong wind astern. Covered over 100 miles in 4 hours 55 mins. Rain and clouds on part of journey. Arrived Heliopolis between 15.30 and 16.00 hours. Their arrival was a surprise to all. They passed over

Cairo in very close formation and made excellent landings in spite of a very gusty wind. On coming to rest the control of the aircraft was taken over by many enthusiastic R.A.F. mechanics, who escorted them triumphantly to the tarmac. On getting out of their machines everyone was astounded with the cleanliness of their aircraft and the immaculate appearance and the ever cheerful spirits of the pilots,—one of whom (it is unnecessary to mention which) immediately took out his sole piece of luggage, to wit the banjulele, and let go in his old inimitable style, so well known to the R.A.F. in Egypt and Iraq.

They only stayed in Cairo one day, and, as reported in THE AEROPLANE of last week, they have since arrived at Baghdad; after crossing the desert, 860 miles in three stages, in the face of a sandstorm, rain and strong wind.

This flight, although treated with indifference by the general press, must rank as one of the finest efforts of the year; and only goes to prove that subsidisation and journalistic assistance are not absolute essentials to the successful performance of long-distance flights.

As a purely individual and personal accomplishment it does show what can be done by British pilots flying perfectly standard production aircraft, and this flight should do more to convince the average man-in-the-street what can be done with equipment "bought over the counter" than any number of record flights made with specially built machines.—

L. B.

WITH BANJULELE BEYOND BAGHDAD.

Mr. T. Neville Stack and Mr. B. S. Leete arrived at Basra on Christmas Day.

On Dec. 26 they left for Bushire at 10.00 hours and after a forced landing at Bandar Dilam arrived at Bushire at 15.00 hours.

BEATING HELVELLYN.

On Dec. 15, Mr. J. F. Leeming, one of the founders and the original Chairman of Committee of the Lancashire Aero Club, started from Woodford Aerodrome near Manchester with the intention of landing on the top of Helvellyn, the mountain which lies approximately between Windermere and Ullswater. His machine was the new Gosport Avro with the Avro Alpha engine. Accompanying him in another Avro was Mr. Bert Hinkler, the test pilot of A. V. Roe and Co. Ltd., who had with him a photographer belonging to *The Manchester Guardian*.

The two machines left Woodford in fine weather with good reports from the North. A few miles West of Preston they met a hailstorm, but afterwards had clear weather till they reached Lancaster. Thence across Morecambe Bay they ran into heavy patches of sea mist. At anything over 5,000 feet they were in bright sunshine, but above a sea of clouds.

According to the report of *The Manchester Guardian's* photographer the two machines made several attempts at diving through the clouds to find clear air underneath. But after, as he put it, groping about for some time, they decided that they would have to return. They followed a compass course over Morecambe Bay, and, after meeting two or three hailstorms, landed at Lancaster for petrol. The rest

of the journey back to Manchester was made in almost total darkness. But with the help of the Ship Canal and the Mere at Rostherne they were able to find the Woodford Aerodrome, where they finally landed in a snowstorm. Although the air had been quite clear on their outward journey, on their way back every town was enveloped in fog and smoke.

Fortunately the engine of each machine ran perfectly and if the flight did nothing else it proved that the Avro Alpha is a reliable all-weather engine. Mr. Leeming deserves every credit for a sporting effort.

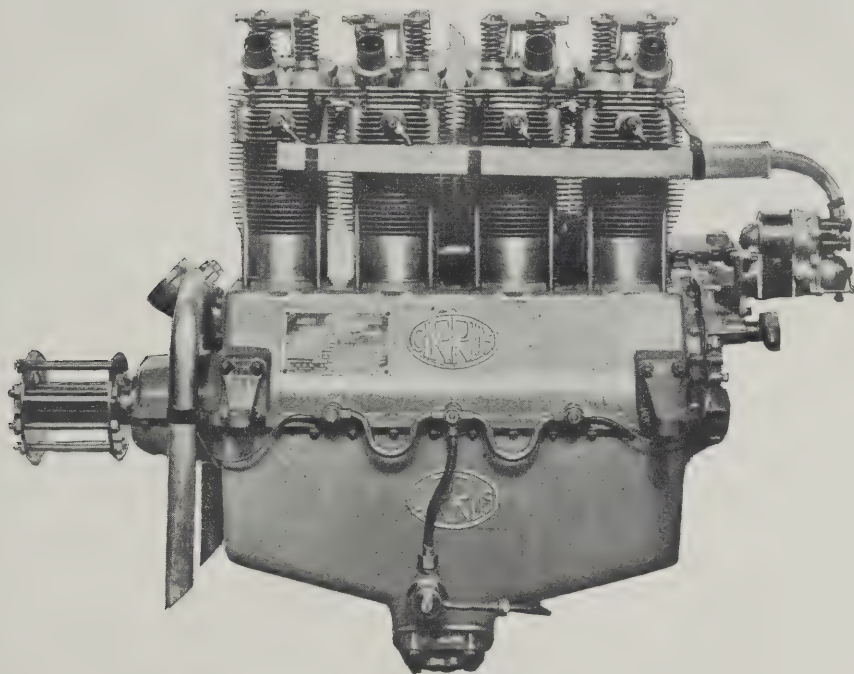
THE SECOND ATTEMPT.

A second attempt was made on Dec. 21 when Messrs. Leeming and Hinkler together in the Avro Gosport started from Woodford. Owing to plug trouble they had to land at Lancaster, where they spent the night. The next morning, Dec. 22, the weather being unexpectedly fine, they decided to attempt a landing on Helvellyn, though no special preparations had been made. For the previous flights they had arranged to have assistance on the top of the mountain, with smoke fires to indicate the direction of the wind, but this time they decided to do without.

They landed within a few yards of the cairn on the sum-



THE CONQUEROR OF HELVELLYN.—The Avro Gosport, with Avro Alpha engine, in which Mr. John Leeming, Chairman of Committee of the Lancashire Aero Club, and Mr. Bert Hinkler, landed on the top of Helvellyn.



LONDON TO BAGHDAD.

The two CIRRUS-MOTH Light Aeroplanes piloted by Captain T. Neville Stack and Mr. B. T. M. S. Leete have reached Baghdad.

Both machines are fitted with A.D.C. "CIRRUS" Mark II aero engines and have accomplished a record flight for Light Aeroplanes (including a 250 mile sea crossing) and this again demonstrates the reliability of "CIRRUS" aero engines.

"CIRRUS" aero engines have been supplied to The British Air Ministry, The Six English Light Aeroplane Clubs, The Australian Air Force, The Australian Aero Clubs, The Irish Free State Aero Clubs, The De Havilland School of Flying, a number of British Aircraft Constructors, Foreign Governments and Private Owners, etc., etc.

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mit of the mountain, and about 20 or 30 yards from the Striding Edge precipice, where the slope was such that the machine attempted to run backwards down the hill, and was only held in position by keeping the engine going until Mr. Leeming was able to jump out and fix some stones as chocks. By sheer chance Professor E. R. Dodds, Professor of Greek at Birmingham University, happened to have climbed Helvellyn the same morning, and was actually on the summit when the machine arrived. Consequently the two aviators had independent evidence of their accomplishment.

The worst part of the flight was the bumpiness of the air near the mountain. One drop was so sudden that Mr. Leeming lost a letter which he was to have dropped at Thirlmere and Mr. Hinkler lost a cushion. Apparently they would have lost themselves but for their Avro safety belts.

After a brief stop on the summit the machine got away uphill over Striding Edge above Red Tarn, a performance which was in itself evidence of the pulling power of the

Avro Alpha. Thereafter they landed on Windermere for petrol and reached Woodford early in the evening.

It is interesting to note that the Avro Alpha engine, which has been kept more or less on a private secret list, apparently till it acquires Air Ministry approval, gives 120 h.p. for a weight of only 230 lbs., including the two magnetos and exhaust pipes. The petrol consumption is estimated at about four gallons to the hour. It gives maximum power at 1,650 revs., but in the Avro Gosport cruises quite comfortably at 1,200 r.p.m.

Everybody concerned with the performance deserves to be congratulated. The Avro people on having proved the pulling power of the Alpha and the rough-landing ability of the Gosport, Mr. Leeming on his energy and initiative in having organised a flight which must certainly help to make Lancashire and Cumberland air-minded, and both Mr. Leeming and Mr. Hinkler on their pluck and skill in carrying the attempt to a successful conclusion.—C. G. G.

TRAINING AIRCRAFT APPRENTICES.

A paper on "The Training of Aircraft Apprentices" was read by Wing Cdr. C. D. Breese, A.F.C., R.A.F., Officer commanding the Technical Training Section, No. 1, School of Technical Training (Apprentices), Halton, before the Royal Aeronautical Society on Dec. 16. Colonel the Master of Sempill was in the Chair.

Colonel Sempill opened the proceedings by announcing that the Council of the Society had decided in memory of the late Mr. A. B. Elliott, who died at Basrah as the result of a bullet wound while acting as engineer on Sir Alan Cobham's Flight to Australia, to award an annual prize of five guineas for competition among the Aircraft Apprentices at Halton. The prize would be awarded for a paper, the subject to be decided by the Commanding Officer at Halton and the Council of the Royal Aeronautical Society. There would be no conditions as to the spending of the prize.

Introducing the Lecturer, Colonel Sempill said that Wing Commander Breese was the Engineer Lieutenant, R.N., in charge of the technical examination of all those who entered the Naval or Military Wings of the R.F.C. through the Central Flying School in 1913. He said that he thought that the importance of the training of the Aircraft Apprentices in the R.A.F. could not be exaggerated. The Royal Aeronautical Society had invited Air Vice-Marshal Sir Philip Game to open the discussion and give expression to the voice of authority. He described Sir Philip as the Director of Training in the R.A.F. whereas the Directorate of Training is only one of Sir Philip's Departments as Air Member for Personnel. Sir Philip had been unable to accept the invitation.

Wing Commander Breese, in the course of a very interesting paper, said that if the rapid expansion of the science and practice of aviation was not to be hindered two things were essential, the brains to foresee, to design and to direct and the practical skill to construct and maintain. In the R.A.F. the period of training aircraft apprentices was three years and three thousand apprentices were under training at the present time.

The object of the three years' intensive training, as applied by the Service, was to produce a mechanic who would be able to maintain and repair a large number of different types of aircraft and aero-engines. He must possess a high degree of skill in all the processes used in repair work, and a thorough knowledge of the principles of construction, assembly, and operation of many different units. Civilian training on the other hand was directed towards the production of a mechanic having sound knowledge of a number of the processes or repair and production as applied to one type of engine or aircraft.

Describing the training at Halton, Wing Commander Breese said that technical training began after three weeks spent in letting the apprentice settle down into Service routine, learning the rudiments of discipline, drill, barrack-room procedure, etc. The first year was devoted to teaching him the basic principles of his trade and the skilful use of tools. Two-thirds of the working hours were spent in the workshops and one-third in the school. In this way the practical and theoretical sides were taught simultaneously.

The lecturer exhibited some examples of the work of the apprentices during their first year, both as fitters and riggers. From the first the apprentice was taught to read from blue prints and to make rough sketches of the work in hand. The first year's school work consisted of the fundamental facts of mechanics, heat, electricity and magnetism. His studies also included drawing, history, literature, etc., and science and mathematics.

After the first year a further specialisation was made in each trade. The second year was devoted to teaching the detail of the special subject of the trade. During the last year the apprentices concentrated upon the repair of engines and aircraft and practised the running and fitting of bearings, etc. The final four months was spent in revision.

The classes were arranged so that no instructor had more than ten boys. Each entry constructed complete machines (of condemned material).

All trades spent three weeks at the aerodrome learning the handling, cleaning and maintenance of aircraft, swinging of aircrews, taxiing, filling up and methods of salvaging crashed aircraft. Flights were also given to all apprentices.

After a description of the educational side of the training Wing Commander Breese said that he was convinced that it was essential for the production of the particular type of mechanic required by the Service.

The minor trades included turners, sheet metal workers, motor body builders, wireless operators, etc.

An apprentice was not considered to be a fully-qualified mechanic until he had served one year with a Service unit, where he was expected to acquire that experience which might enable him to apply what he had been taught at the School of Technical Training.

The system of training was in no way tightly bound down. Alterations were made every year as expansion showed up the weak points.

With regard to discipline, drill and so on—an apprentice did not spend a great deal of time learning drill. A high standard was maintained because there was strict discipline and control during the short but very frequent periods each day when he paraded and marched to and from barracks, workshops and school.

GROUP CAPTAIN R. P. ROSS, D.S.O., A.F.C. (Commanding the Electrical and Wireless School, R.A.F., Flowerdown) objected to wireless being called a "minor trade." They were very proud of it at Flowerdown. He wished the Squadrons would realise that the ex-Aircraft Apprentice straight from Halton or Flowerdown was not the finished article but required the twelve months' experience mentioned by Wing Commander Breese.

WING COMMANDER BREESE apologised for calling wireless a "minor trade" and said he was referring to the numbers of apprentices who followed it and not to the importance of the subject.

WING COMMANDER T. R. CAVE-BROWN-CAVE thought it was very satisfactory that a Society usually so inclined towards theory should listen to such a practical paper as that of Wing Commander Breese.

LT.-COL. LOCKWOOD-MARSH said that Halton was one of the pivots on which the organisation of the Air Force depended. No one who had ever been to Halton could imagine that there was too much drill.

He thought it strange that there were not more applications for the vacancies at Halton and that parents did not seem to realise the advantages of this training and of subsequent service in the R.A.F.

He would like to ask Wing Commander Breese what was the attitude of the Trade Unions towards time-expired Airmen who had been Halton apprentices.

He thought the value of the education at Halton was shown by the number of apprentices who went to Cranwell and eventually obtained commissions.

He thought the pivot lacking in Air Force organisation was an Engineering Branch of officers. King's Regulations authorised Commanding Officers to nominate a qualified engineering officer to take charge of the workshops in each Unit. He himself had spent four days trying to discover through the medium of the Air Force List to which Units the qualified Engineering Officers had been allotted. [One cannot understand why Col. Lockwood-Marsh took four days. He should have telephoned to THE AEROPLANE, when any member of the staff could have collected the information for him from the Air Force List in half an hour.]

COLONEL I. CURTIS, C.B.E., M.A. (Educational Adviser to the R.A.F.), said that experience at Halton should help to dissipate the impression that learning and practical application did not go together. The better the education the shorter the period of training.

THE CHAIRMAN (COLONEL THE MASTER OF SEMPILL) thought that too much attention was paid to general education. The training was more suitable for officers than for mechanics and would lead to a wrong relative position between young officers and their mechanics. He thought that the work of the apprentices should be productive and scrap material should not be used. Old engines should not be used for training fitters. In the Navy the apprentices were employed on work of definite use.

There was a great disparity in the time spent on practical work in the Navy and in the Air Force. In the Navy an apprentice worked in the workshops for 46 hours a week for five years and in the Air Force an apprentice did only 16 hours a week for three years. [On the other hand an engine-room hand is never anything but a mechanic, whereas an aircraftman may have to fight as an infantry soldier in self defence.] He believed that the Trade Unions would accept time-expired Naval ratings but not time-expired aircraftmen.

WING COMMANDER BREESE said that he would like to see the apprentices working upon productive work and the School of Technical Training would welcome production jobs which they could do. They were now getting modern types of engines for instructional purposes. The examples of work which he had shown were representative of skill-of-hand and not of application. No decision had been made by the Trade Unions and the question of Halton-trained mechanics would not arise for another ten years. Economy was the reason for the three years' training and everyone concerned with this training would be very thankful for another year, but that was out of the question at present.

Regarding the relationship between officers and mechanics, a bad mechanic would not make a better officer. He thought that the provision of Technical Officers would probably be met by the Aircraft Apprentices who were given commissions. The seven hours' drill per week included all clothing parades, barrack routine, etc. There was no red-tape about Halton and the syllabus was continually being modified.—C. M. MCA.

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Engine : Armstrong
Siddley Jaguar.

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For this flight of 26,000
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machine was a

D.H. 50 J SEAPLANE

Engine : Armstrong
Siddley Jaguar.

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Won by Capt. H. S. Broad,
A.F.C., flying for Sir Charles
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THE ROYAL AIR FORCE.

The London Gazette.

Dec. 21.

GENERAL DUTIES BRANCH.—The following Plt. Offs. on probation are confirmed in rank (Dec. 2):—E. G. Searson, H. J. Walker.

The following are transferred to the Reserve:—CLASS A: Flt. Lts.—G. Birkett (Dec. 5), D. Craik, D.F.C. (Dec. 19), F. J. Watts (Dec. 19). Flt. Off.—C. C. K. Dagg, A.F.C. (Dec. 23).

CLASS B: Flt. Off.—R. J. Copley (Dec. 19).

CLASS C: Flt. Off.—F. R. Eason (Dec. 23).

The following resign their S.S. comms.:—Flt. Lt. A. A. Ward (Lt., R.A.R.O., R.A.) (Dec. 10), Flt. Off. D. C. H. Ferguson (Dec. 11).

F. H. Kennedy, Lt., R.N., Flt. Off., R.A.F., relinquishes his temp. comm. on return to Naval duty (Oct. 31); Flt. Off. A. Leslie-Moore relinquishes his S.S. comm. on account of ill-health and is permitted to retain his rank (Oct. 30).

Plt. Off. G. F. G. Cox is dismissed the service by sentence of General Court Martial (Dec. 3).

STORES BRANCH.—Flt. Off. H. J. Hunter is granted a perm. comm. in this rank with effect from Nov. 24, 1925, on completion of probationary service; Flt. Off. on probation H. Seidenberg is confirmed in rank (Oct. 6); Plt. Off. J. E. Welman takes rank and precedence as if his appointment as a Plt. Off. bore date Aug. 10. Reduction takes effect from Nov. 25.

MEMORANDUM.—Lt. L. W. B. Parsons relinquishes his temp. comm. on re-enlistment in the Territorial Army (May 17, 1920).

RESERVE OF AIR FORCE OFFICERS.—GENERAL DUTIES BRANCH.—H. N. Miller is granted a comm. in Class B as a Plt. Off. on probation (Dec. 21); H. P. Wilson is granted a comm. in the Special Reserve as a Plt. Off. on probation (Dec. 21).

The following Flt. Offs. relinquish their comms. on completion of service:—A. L. Jones (Oct. 24); H. E. Winch (Oct. 24); G. S. Fiske (Nov. 27); W. J. Burr, M.C., D.C.M., M.M. (Dec. 17); S. P. B. De M. Bucknall (Dec. 19).

Appointments.

Week ending Dec. 26.

GENERAL DUTIES BRANCH.—Wing Commander W. S. Douglas, M.C., D.F.C., to R.A.F. Depot, Uxbridge, for course at Imperial Defence College, 1/1.

Squadron Leaders A. H. Peck, D.S.O., M.C., to H.Q., Iraq, 7/12. L. L. MacLean, to Aircraft Park, India, 7/12. D. F. Stevenson, D.S.O., M.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25/11.

Flight Lieutenants J. V. Read, M.B.E., to No. 4 F.T.S., Egypt, 7/12. I. M. Rodney, to Aircraft Depot, India, 7/12. H. A. Smith, M.C., to No. 55 Sqdn., Iraq, 7/12. E. F. Turner and W. E. Knowlden, to H.Q., Iraq, 7/12. L. M. Elworthy, to No. 84 Sqdn., Iraq, 7/12. H. J. Collins, to No. 30 Sqdn., Iraq, 7/12. L. C. Wynne-Tyson, to Station Commandant, Basrah, 7/12. G. F. Moody, to No. 6 Armoured Car Coy, Iraq, 7/12. M. A. Simpson, to R.A.F. Depot, Uxbridge, 1/12. M. H. Coote, to No. 29 Sqdn., Duxford, 1/1. L. Darvall, to C.F.S., Wittering, 31/12. W. E. G. Bryant, M.B.E., to School of Army Co-operation, Old Sarum, 20/12. F. G. Brockman, to H.Q., Fighting Area, Uxbridge, 7/12. V. Buxton, O.B.E., to No. 14 Sqdn., Palestine, 18/12.

Flying Officers F. W. Wrench, to R.A.F. Training Base, Leuchars, 15/12. R. H. Barlow, to R.A.F. Training Base, Leuchars, 23/12. H. J. Paine and R. J. E. Haynes, to Station Commandant, Basrah, 7/12. F. L. Kingham, to No. 4 Arm. Car Coy., Iraq, 7/12. G. Lacey, to Aircraft Depot, Iraq, 7/12. B. T. Crook, to No. 6 Arm. Car Coy., Iraq, 7/12. A. B. Kay, to No. 6 Sqdn., Iraq, 7/12. E. F. Thorpe, to Aircraft Depot, India, 7/12. (Hon. Flt. Lt.) I. E. Brodie, to No. 5 Sqdn., India, 7/12. M. D. Ommonney and C. A. Bell, to No. 31 Sqdn., India, 7/12. R. H. Holmes, to No. 60 Sqdn., India, 7/12. P. Coyle, to Aircraft Depot, India, 11/12. J. F. Mehigan, to No. 2 Wing H.Q.,

India, 11/12. L. J. Booth and J. H. Powle, to No. 20 Sqdn., India, 11/12. F. S. S. Lamprey, to No. 208 Sqdn., Egypt, 18/12. L. R. W. Tillard, H. C. Macphail and R. D. Adams, to No. 31 Sqdn., India, 11/12. N. K. Howard, to Aircraft Depot, India, 11/12. E. S. Burns, to R.A.F. Base, Gosport, 1/1. R. F. Overbury, to School of Naval Co-operation, Lee-on-Solent, 1/1. L. Butler, to Home Aircraft Depot, Henlow, 29/12. V. A. C. Ross, to No. 58 Sqdn., Worthy Down, 1/1. I. G. E. Dale, to R.A.F. Training Base, Leuchars, 1/1.

Pilot Officers E. G. H. Russell-Stracey, J. N. Young and T. K. Merrett, to Aircraft Depot, India, 7/12. A. V. Hammond, to No. 208 Sqdn., Egypt, 7/12. J. D'A. Keary, to R.A.F. Training Base, Leuchars, 10/12. G. B. Collet, to No. 5 Sqdn., India, 11/12. W. R. J. Spittle and C. J. Veevers, to Aircraft Depot, India, 11/12. J. C. Lewis, to No. 28 Sqdn., India, 11/12. E. G. Hordern, to Station Flight, Duxford, 1/1.

MEDICAL BRANCH.—Squadron Leaders D'A. Power, M.C., to H.Q., Air Defence of Great Britain, Uxbridge, 8/1. R. S. Overton, to H.Q., Iraq, 7/12. W. E. Hodgins, M.B., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 17/11, and to Air Ministry, Directorate of Medical Services, 5/1. Flight Lieutenant W. E. Barnes, to R.A.F. Hospital, Halton, 28/1. Flying Officers A. F. Cook, to Palestine General Hospital, 7/12. L. I. Ryder, to R.A.F. British Hospital, Iraq, 7/12. W. D. McKeown, M.B., and E. J. Jenkins, to H.Q., Egypt, 14/12.

STORES BRANCH.—Squadron Leaders W. C. Clark, to Stores Depot, Iraq, 7/12. F. Tedman, M.B.E., to Aircraft Depot, Iraq, 7/12. N. R. Fuller, to H.Q., Iraq, 7/12. Flight Lieutenants E. E. Porter, M.B.E., D.C.M., and A. T. Shaw, to Aircraft Depot, Iraq, 7/12. H. E. Tansley, M.C., to Supply Depot, Egypt, 7/12. E. W. Lawrence, to R.A.F. Depot, Egypt, 7/12. J. Hobbs, to Aircraft Depot, India, 11/12. Flying Officers C. B. Horsfield, to No. 8 Sqdn., Iraq, 7/12. H. O. Fellowes, to Inland Water Transport, Iraq, 7/12. B. W. Hemsley, to No. 5 Sqdn., India, 11/12. G. L. Worthington, to Aircraft Depot, India, 11/12. A. P. Woollett, to Air Ministry, Directorate of Equipment, 7/12. Pilot Officers D. J. Divett, to No. 84 Sqdn., Iraq, 7/12.

The Electrical and Wireless School, R.A.F.

On Dec. 19, Air Vice Marshal Sir John Steel, K.B.E., C.B., C.M.G., A.O.C. Wessex Bombing Area, inspected the Passing-out term of Aircraft Apprentices who have been trained at Flowerdown.

In the course of his Report, Group Capt. R. P. Ross, D.S.O., A.F.C., Commandant, says that there were 248 Aircraft Apprentices under training at Flowerdown. Of these 196 were in training as Wireless Operator Mechanics, 10 as Instrument Makers, and 42 as Electricians. The discipline and drill had been excellent. The educational standard attained by the entry now passing out had been very good indeed. They have shown a spirited and unflinching interest in their work.

A high standard has been maintained in technical sections and workshops. The voluntary evening classes have been well attended. Every Aircraft Apprentice had successfully operated wireless instruments in the air.

Of the present entry 10 have passed out as Leading Aircraftmen, 20 as 1st class Aircraftmen, and 6 as 2nd class Aircraftmen.

A Cadetship has been offered to AA. T. Shelley, who was also the winner of the Hyde-Thomson Memorial Prize.

AA. F. J. Spedding has won the Air Ministry Prize for



IN THE SHADE OF THE SHELTERING PALM.—The Staff of the R.A.F. Depot, Middle East, at Aboukir, Egypt, with Group Captain F. W. Bowhill, C.M.G., D.S.O. (Officer Commanding) in the middle of the front row. The present O.C. is Group Captain K. G. Brooke, C.M.G., Group Captain Bowhill having taken over Technical Staff duties, Iraq Command.

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the Highest Aggregate Marks in all sections. AA. A. F. Monks has won the Air Ministry Prize for the highest marks in Technical Subjects, and AA. Bourne has won the Air Ministry Prize for the highest marks in Educational Subjects.

The Auxiliary Air Force.

The Trophy presented by Lord Esher for the best all-round Squadron of the Auxiliary Air Force, was presented to No. 601 (County of London) (Bombing) Squadron on Dec. 23, at the Duke of York's Headquarters, Chelsea, by Air Chief Marshal Sir Hugh Trenchard.

Sir Hugh Trenchard inspected the Squadron and said that there was no reason why the Auxiliary Air Force machines should not be kept as efficient as the equipment of a Regular Squadron.

No. 601 (County of London) (Bombing) Squadron is commanded by Sq. Ldr. the Lord Edward Grosvenor.

A Further Correction.

The following letter has been received:—
Sir,—With reference to your correction in the issue of Dec. 1, as to when Sq. Ldr. Jillings qualified as a pilot, both you and your correspondent are wrong. Sq. Ldr. Jillings, then a 2nd Lieut. and an Adjutant of No. 3 Reserve Aeroplane Squadron, learned to fly at Shoreham. He took his ticket, No. 1178, on Apr. 15, 1915, at Shoreham aerodrome. The machine was a Maurice Farman, known locally as the "White Hope," and on the same machine Lord Hugh Cecil, Mr. Oswald Mosley, Major Greer (late C.A.T.O., Croydon) and several other people, whose names are now known, did much of their early flying.

(Signed) GEOFFREY DORMAN.

R.A.F. SPORTS

Inter-Service Boxing.

H.R.H. the Prince of Wales was present at the Stadium Club on Dec. 9 when the first team championship to be organised by the Services' Boxing Association was decided. The contest was between teams of eight, representing the R.N., R.M., and R.N.V.R.; the Army; the R.A.F.; and the Territorial Army.

The Army scored 28 points, the R.A.F. were second with 16 points, the Territorials third with 15 points, and the Navy, Marines and R.N.V.R. fourth, with 13 points.

Boxing at Salisbury.

A successful boxing tournament, organised by officers of the R.A.F., Old Sarum, took place at the Victoria Hall, Salisbury, on Dec. 2, in aid of the Old Sarum Cot at the Great Ormond Street Hospital for Children. About £30 was raised for the fund.

The first part of the programme consisted of four-round contests between the R.A.F., Old Sarum, the R.A.F., Netheravon, and two local men. The second half consisted of three-round contests between officers of the R.A.F., Old Sarum, and Cambridge University.

Feather-weights.—AC. Asplin (Old Sarum) knocked out AC. Scanlon (Netheravon).

Light-weights.—AC. Hughes (Old Sarum) beat AC. Jacobs (Netheravon) on points after a fairly even contest. AC. Morris (Netheravon) and Hurtridge (Salisbury) fought a fast, even fight. The result was a draw.

Middle-weight.—This was a special six-round contest between AC. Rollason, R.A.F. Middle-weight Champion, and AC. Lewis. The Referee stopped the fight in the fifth round and Rollason was declared the winner.

Welter-weight.—AC. Ing (Old Sarum) beat J. Kerley (Salisbury) on points.

In the Officers v. Cambridge *feather-weights* Flg. Off. A. C. Watkins won easily on points from D. Y. Obeysekeri (Cambridge).

Light-weights.—Flg. Off. Loughman (R.A.F. Champion) beat W. D. Butterworth (Cambridge) after one of the fastest bouts in the evening.

Middle-weight.—Flg. Off. I. McGregor (Welter-weight Champion) knocked out R. J. Andrew (Cambridge) in the first round.

Light-Heavy-weight.—T. Wright (Cambridge) beat Flg. Off. C. A. Bell (Wakefield Champion, 1926) on points.

A special *Middle-weight* contest was fought between Plt. Off. S. A. Thorn (Wakefield Champion, 1925) and Plt. Off. Underdown (Wakefield Champion, 1926). Thorn won on points.

The tournament ended with an exhibition match between T. Phillips (Instructor to the 2nd Welch Regt.) and Private Sullivan (2nd Welch Regt.).

Eastchurch Station Sports Summary.

CRICKET.—Early in the season matches were spoilt by the weather, but in July and August some excellent games were played. R.A.F., Manston, won both inter-station games, the first rather easily, but the second, at Manston, was a well-fought game. Good victories were obtained over the United Services (twice), Sheerness Garrison (twice) and King's School, Rochester. A feature of the season was an all-day match against the Eastchurch Old Boys' Association (composed of members of the R.N.A.S. stationed at Eastchurch during the War, 1914-19). This was played at Eastchurch on Aug. 25 and won by "Present."

In Inter-Section matches Ground Training Section carried off the honours.

Outstanding individual efforts during the season were those of Cpl. Turner, who scored two centuries, and AC. Moffet, who made 55 against King's School and several other good scores. AC. Ellis and AC. Altria shared the bowling honours, and F.S. Bird proved himself an efficient wicket-keeper.

RIFLE SHOOTING.—Teams were entered for the R.A.F. and Kent

County Meetings. In the former Eastchurch shot for the Chief of the Air Staff's Cup, scoring 1,103 out of a possible 1,600, and securing second place. The R.A.F. Individual Championship at Bisley was won by L-AC. Willott, of Eastchurch, who took the aggregate cup and medals with a score of 323, out of a possible 400. Flt. Lt. Dark and Sgt. Burton were fourth and sixth respectively with scores of 314 and 305. For Eastchurch to have three out of the first six marksmen in a competition in which 40 took part, and to carry off premier honours, is very satisfactory.

In the Tyros Challenge Cup L-AC. Hulse came third, AC.1. Lee was sixth, and AC.1. Kirby eighth.

At the Kent Meeting Eastchurch shot for the President's Cup and came out third.

SWIMMING.—The R.A.F. Swimming Association was formed this year and during the past season no fewer than 18 Officers and 50 Eastchurch Airmen qualified for the R.A.F. Swimming Certificate. It is probable that for the size of the Station, these numbers compare favourably with others.

A successful Water-polo season has been achieved. Great keenness and skill, particularly on the part of L-ACs Tucker and Brittan, have prevailed throughout and most enjoyable home and away matches have been played against Maidstone (5-2 and 1-6), Sheerness (1-1, 1-2) and R.N., Chatham (1-0, 1-2) in the Kent League, Div. II.

Swimming at Eastchurch is definitely popular with all ranks. This is not surprising as the bath is one of the best in the Service and it is hoped a large number of novices will avail themselves of the excellent facilities next year.

BOXING.—The first match of the season took place at Eastchurch against Manston on Oct. 21. Each Station was represented by a team of 8 novice Airmen and 1 Officer. Eastchurch won 7 out of the 9 contests staged.

Association Football.

R.A.F. v. Oxford University.—The R.A.F. beat Oxford at Uxbridge on Dec. 8 by 3 goals to 1.

The *Morning Post* account of the game states:—

As it happened, the luck favoured the smarter side, and probably the Air Force have never had such a good eleven as the men captained by Flg. Off. Webster. Bennett, a new centre forward, set a capital example in getting quickly to the ball and passing accurately, his leadership doing much to bring out the good form of Flg. Off. Chipper and ACs. Morris and Grist, the left wing. All these men were in great form, and nothing better than Chipper's good shooting could be desired. The halves and backs played together with such sure understanding that the forwards had plenty of the ball, and they made good use of their opportunities.

The R.A.F. team were:—

AC. A. A. Baker (Halton); L-AC. W. Bangay (Cranwell) and Flg. Off. S. N. Webster, A.F.C. (captain) (Martlesham Heath); Cpl. J. Atkins (Cranwell), AC. F. S. Gudgeon (Cranwell), and AC. J. Hogg (Uxbridge); Sgt. G. Turner (Netheravon), Flg. Off. A. B. Chipper (H.M.S. *Furious*), AC. J. G. Bennett (Duxford), AC. S. J. Morris (Halton), and AC. H. Grist (Cranwell).

The R.A.F., Great Yarmouth.

The seventh annual re-union dinner for Officers who at one time served at Great Yarmouth was held on the last Saturday in October at the Café Royal. Major Egbert Cadbury, D.S.C., D.F.C., was in the chair. This dinner has always been a singularly happy affair (largely due to the efforts of its secretary, "Blossom"), and this year's was particularly so—as no less than twenty-two sat down to dine. Unfortunately many serving members were abroad.

It may interest, and sadden, them to know that there is practically none of the fabric of the station left—one "Short" shed, the engineers' shop and a few huts—the rest is levelled to the ground and forms a playground for sea-gulls and Scotch fisher girls. The old White Ensign hangs in the church with a bronze plate beneath it, and the spirit of the old station is still alive amongst many.—C. F. S. G.

The R.A.F. in Parliament.

R.A.F. MESS BILLS.

In the House of Commons on Dec. 13, in reply to a question by Mr. J. HUDSON, the SECRETARY OF STATE FOR AIR said that the monthly limit of £5 to be expended on wine in the individual mess bills of the officers of the R.A.F. was fixed as a reasonable maximum when regard is had to the varying circumstances of officers and the amount of entertainment given by them. The term "wine" as used for this purpose in the King's Regulations and Air Council Instructions for the R.A.F. was interpreted as including all kinds of intoxicants.

H.M.S. VINDICTIVE.

In the House of Commons on Dec. 15, CAPT. GARRO-JONES asked the FIRST LORD OF THE ADMIRALTY whether H.M.S. *Vindictive* made use of the catapult apparatus installed for launching aeroplanes. Mr. BRIDGMAN: "The answer is in the affirmative." [Letters from readers suggesting that "affirmative" should read "infirmary" will not be published, and, anyway, it is called a "sick-bay" in the Fleet Air Arm.—C. M. MCA.]

R.A.F. EQUIPMENT.

In the House of Commons on Dec. 15, in reply to a question by Mr. HAMMERSLEY, the SECRETARY OF STATE FOR AIR said that out of a total of 22 types of machines (excluding experimental machines) in use by the R.A.F. to-day, there were only two which were designed prior to 1917—one a Service and one a training type. The number of machines of these types at the present time represented approximately 36 per cent. of the total number of machines.

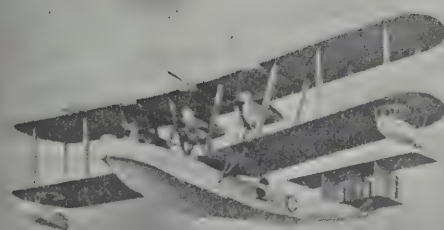
AN ITALIAN PARACHUTE.

In the House of Commons on Dec. 15, in reply to a question by COL. DAY, the SECRETARY OF STATE FOR AIR said that the trials of the new Italian parachute at Stag Lane were a private demonstration. Representatives of the Air Ministry had attended by invitation. A successful descent had been made from 1,200 ft. by Lieut. Freri. The result of the test was considered to be sufficiently satisfactory to warrant further experiments.

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THE ROYAL AIR FORCE CAPE FLIGHT.

An official account of the flight of four Service machines from Cairo to the Cape and back to England based on the report of Wing Cdr. C. W. H. Pulford, O.B.E., A.F.C., has been issued by the Air Ministry in the form of an A.M. Communiqué No. 1401. The Report starts with a description of the organisation of the flight and explains that the flight was carried out in the ordinary course of R.A.F. training and that no attempt was made to break records.

The object of the flight was to visit the Dominion of South Africa and the various Colonies on the route and to gain experience in long-distance flying, in testing the despatch of reinforcements and in co-operating with the local forces.

The route which was practically the same as that organised by the R.A.F. in 1919 and followed by Sir Pierre van Ryneveld in 1920, was divided into three sections, Northern, Central and Southern.

The Northern section, organised by the Middle East Command extended from Aboukir to Nimule (Southern Sudan border). The Central section which was in charge of one R.A.F. officer, one N.C.O., and three airmen lay between Jinja in Uganda and Abercorn in Northern Rhodesia. The Southern section in charge of one R.A.F. officer and two airmen stretched from N'dola to Cape Town.

The Flight was equipped with four Fairey IID aeroplanes with Napier Lion (Series V) engines. A spare machine and spares were sent to Aboukir and two spare engines and various spares were dumped at Kisumu (Lake Victoria). Another spare machine and four spare engines and other spares were dumped at Cape Town or Pretoria.

The Flight was formed at Northolt on Nov. 6 and was complete with personnel on Dec. 1. Consumption tests and practice flights with heavily-loaded aeroplanes were carried out at Northolt in addition to the supervision of the machines selected for the flight and the preparation and checking of the equipment, maps, etc.

The weight of the equipment which could be carried was roughly 450 lbs. and included spare parts, tools, kits, arms, medical stores, emergency rations, etc.

Wireless was not carried for three reasons: (a) it was heavy, (b) it would be of no value in Central Africa, and (c) it required a skilled operator.

The machines were packed at the R.A.F. Packing Depot, Ascot, and in order to save time at Aboukir they were packed with the undercarriages on and centre sections in place in special large cases. The spare machines were packed in ordinary cases as there was insufficient tunnel clearance on the Kenya and South African railways.

The ground party for the Northern section left Cairo on Dec. 22. They travelled through Wadi Halfa to Khartoum, thence along the White Nile to Rejaf and by car and carrier to Nimule distributing fuel and preparing landing grounds along the route.

The Report states:—"The aeroplanes of the Flight were disembarked at Alexandria on Jan. 25 and except for carrying away most of the overhead electric light cables and thus fusing all the lights in a street in Alexandria, were transported by road to Aboukir without incident."

The personnel engaged in the flight were:—Wing Cdr. C. W. H. Pulford, O.B.E., A.F.C., Flt. Lt. P. H. Mackworth, D.F.C., Flt. Lt. E. J. L. Hope, A.F.C., Flg. Off. W. L. Payne, Flt. Lt. L. E. M. Gillman (Navigation), Flg. Off. A. A. Jones (Technical), Sgt. Hartley (Fitter) and Sgt. Gardener (Rigger). The first four were pilots.

The Flight started from Heliopolis at 07.10 hours on Mar. 1 and finished there at 08.35 hours on May 27, one day ahead of the timetable. The total flying time for the four aeroplanes for the flight to the Cape and back to Cairo was approximately 568 hours. The actual time between Cairo and return for the leader's aeroplane was 140 hours 5 minutes.

Very little trouble was experienced during the flight. One magneto had to be replaced, also two airscrews and all the oil tanks, but no major repairs were necessary.

Except for a slight adjustment of the time-table at Kosti on account of very low visibility and an alteration in orders at Nairobi on the return flight the programme was maintained throughout the flight. This was owing to the reliability of the engines and aeroplanes and also to the efficient ground organisation prepared by the advance parties of R.A.F. personnel.

The following account consists of extracts from the official Report:

THE OUTWARD FLIGHT.

Cairo-Assiut, 220 miles. Assiut-Aswan, 260 miles. (4 hrs. 57 mins.)

At 07.10 hours on Mar. 1 the Flight took off in formation from Heliopolis for Assiut against a strong head wind. As they passed over Helwan aerodrome aeroplanes from No. 47 Sqdn. ranged alongside and waved good-bye.

The wind changed from south to north at Samalut thus enabling the country between Cairo and Assiut had no outstanding features. There is the usual strip of cultivation along the banks of the Nile. Except for the Fayum Oasis where it is much deeper this strip extends on the western bank for perhaps five miles in depth until it reaches the Desert. It is much narrower on the eastern bank.

After Assiut the desert on each side of the cultivation appears to be hilly and is much intersected by valleys. Between Quara and Luxor the country is very broken.

It may be of interest here to describe the routine on landing which was adhered to during the whole flight. Immediately on landing and whilst taxiing in, R.A.F. ensigns were hoisted; they were not kept flying in flight owing to the heavy wear and tear. Air intake plugs, airscrew, engine, cockpit and compass covers were immediately put on. The aeroplanes were then pegged down and flying controls secured. Where the ground was too hard for screw pickets heavy weights such as full oil or petrol drums were used instead. The usual practice was to peg down with one picket to each wing tip, one to the airscrew, and one to the tail, the camber gear being wound down to normal. In localities where there was any likelihood of rain all petrol tank air vents were plugged in order to prevent water getting in. Refuelling and routine inspections were then proceeded with.

Aswan-Wadi Halfa, 185 miles. Wadi Halfa-Atbara, 350 miles. (5 hrs. 46 mins.)

The Flight left Aswan for Wadi Halfa at 07.09 steering by compass. Halfa was reached at 09.04. Aircraft were filled up to full stowage of petrol taking eight gallons extra in the rear seat as the next journey was the first long flight. Halfa was left for Atbara at 10.52 on a compass course for Abu Hamed.

Over the Nubian Desert up to 6,500 feet it was found to be very bumpy, and the Flight struck particularly heavy bumps when passing over the numerous jebels (hills) between Halfa and Abu Hamed. Atbara was reached at 14.43 after a flight of 3 hrs. 51 mins.

Atbara-Khartoum, 175 miles. (2 hrs. 27 mins.)

Atbara was left for Khartoum at 09.39 hours, but the Flight had to return after 20 minutes owing to one aircraft (No. 1102) developing a leaky petrol sight glass.

Khartoum was reached at 12.38. The Flight remained at Khartoum from Mar. 4 to 6, the aeroplanes being housed in two Bessonneau hangars erected for the Detached Flight of No. 47 Sqdn. stationed at Khartoum.

An Haboob (sandstorm) struck Khartoum from the north-west at sunset on the evening of Mar. 5. It was the Flight's first experience of such a thing and it was found to be very unpleasant. Although the aeroplanes were housed, the precaution had been taken before leaving them of putting on all covers and inserting plugs in the air intakes, so that these were not filled with sand.

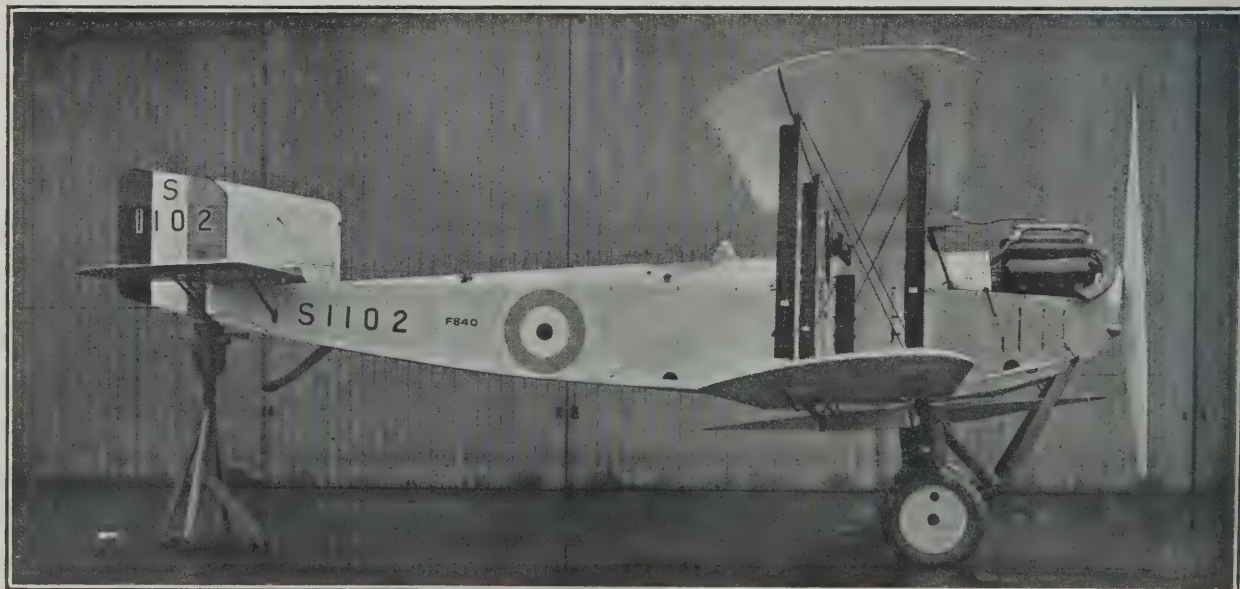
Khartoum to Kosti, 175 miles. (2 hrs. 25 mins.)

The Flight left Khartoum for Kosti and Malakal at 07.25 on Mar. 6. The Flight followed the Nile. The visibility was under a mile in places. An endeavour was made to climb out of it but at 7,000 feet it was no better and the Nile was lost to view. At Kosti at 09.50 the Flight landed having increased the length of the journey by about 50 miles by following the river.

Having received a weather report from Malakal reporting moderate visibility the Flight left Kosti at 09.27 on Mar. 7, but after flying south for about 15 miles the visibility became worse than the day before. The Flight, therefore, returned to Kosti.

Kosti-Malakal, 260 miles. (3 hrs. 53 mins.)

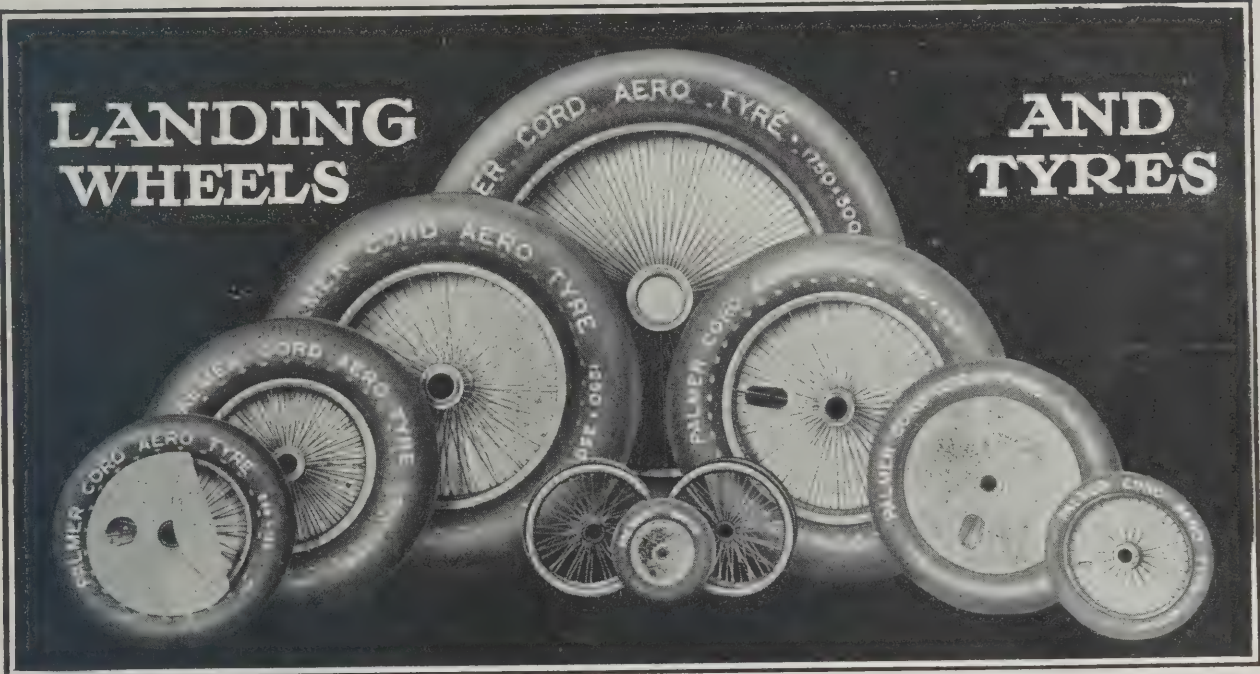
The visibility on the morning of the 8th appeared to be no better but it was imperative to get on so as to keep to the time-table. The Flight, therefore, left Kosti at 09.26. The Nile was followed the whole way until Malakal was reached at 13.19 hours.



ONE OF THE CAPE FLIGHT.—A Fairey IID (Napier Lion engine) as it left the works of the Fairey Aviation Co. Ltd., with spare airscrew below the fuselage, for shipment to Cairo.



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|-----------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|------------|-----------|--------|-------|------------|
| | | Length | Bore | | | | Length | Bore | | | | Length | Bore | |
| | | m/m | m/m | m/m | | | m/m | m/m | m/m | | | m/m | m/m | m/m |
| 375 x 55 | 168 | 111.12 | 25.4 | Central | 700 x 100 | 112 | 150. | 38.09 | Central | 1000 x 150 | 210 | 185. | 60.32 | Central |
| 300 x 60 | 16 | 111.12 | 25.4 | Central | " | 176 | 178. | 44.45 | Central | 1000 x 180 | 148 | 220. | 80. | Central |
| 450 x 60 | 30 | 89. | 31.75 | Central | " | 179 | 178. | 55. | 132/46 | " | 149 | 185. | 55. | Central |
| " | 172 | 130. | 38.09 | Central | 650 x 125 | 119 | 178. | 55. | 132/46 | " | 155 | 220. | 66.67 | Central |
| 575 x 60 | 21 | 160. | 28. | Central | " | 147 | 178. | 55. | Central | " | 166 | 185. | 55. | 125/60 |
| " | 80 | 150. | 38.09 | 104/46 | " | 188 | 120. | 34.92 | Central | 900 x 230 | 107 | 185. | 55. | Central |
| " | 186 | 120. | 34.92 | Central | 750 x 125 | 77 | 178. | 44.45 | 132/46 | " | 108 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 92 | 185. | 55. | 135/50 | " | 128 | 220. | 66.67 | Central |
| 650 x 65 | 78 | 178. | 44.45 | 132/46 | " | 95 | 185. | 55. | Central | " | 137 | 250. | 80. | Central |
| " | 79 | 178. | 44.45 | Central | " | 99 | 178. | 38.89 | 132/46 | " | 157 | 185. | 80. | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 112 | 150. | 38.09 | Central | " | 202 | 185. | 60.32 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 176 | 178. | 44.45 | Central | 1100 x 220 | 134 | 220. | 66.67 | Central |
| 600 x 75 | 21 | 160. | 28. | Central | " | 179 | 178. | 55. | 132/46 | " | 136 | 250. | 80. | Central |
| " | 180 | 150. | 38.09 | 104/46 | 800 x 150 | 161* | 185. | 55. | 135/50 | " | 192 | 185. | 60.32 | Central |
| " | 186 | 120. | 34.92 | Central | " | 162* | 185. | 55. | Central | 975 x 225 | 194 | 185. | 55. | 125/60 |
| " | 190 | 150. | 38.09 | Central | " | 163* | 185. | 66.67 | 135/50 | " | 133 | 250. | 80. | Central |
| 700 x 75 | 78 | 178. | 44.45 | 132/46 | " | 169† | 185. | 55. | 135/50 | 1250 x 250 | 154 | 304.8 | 101.6 | Central |
| " | 79 | 178. | 44.45 | Central | " | 177 | 185. | 55. | 135/50 | " | 115 | 304.8 | 101.6 | Central |
| " | 100 | 178. | 38.09 | 132/46 | " | 183 | 185. | 55. | Central | 1500 x 300 | 126 | 304.8 | 152.4 | Central |
| " | 101 | 178. | 31.75 | 132/46 | " | 211* | 185. | 60.32 | 135/50 | " | 139 | 400. | 152.4 | Central |
| 700 x 100 | 77 | 178. | 44.45 | 132/46 | 1000 x 150 | 167 | 185. | 55. | 125/60 | " | 191 | 350. | 150.3 | Central |
| " | 92 | 185. | 55. | 135/50 | " | 174 | 250. | 80. | Central | 1750 x 300 | 193 | 400. | 125. | Central |
| " | 95 | 185. | 55. | Central | " | 182 | 185. | 55. | Central | " | | | | |
| " | 99 | 178. | 38.89 | 132/46 | " | 187 | 220. | 66.67 | Central | " | | | | |
| | | | | | " | 201 | 185. | 60.32 | 125/60 | | | | | |

*Wheels Nos. 161, 162, 163 and 211 are of stronger type than the other wheels for 800 x 150 tyres. †Wheel No. 169 is fitted with Ball Bearings. Grease gun equipment is now a standard fitting on all wheels.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The Governor of the White Nile Province and the Officer Commanding the 12th Sudanese Battalion greeted the Flight.

As a malarial district had now been reached, the Flight started taking five grains of quinine daily. This was kept up until Pretoria. *Malakal—Mongalla, 350 miles. (3 hrs. 54 mins.)*

The Flight left Malakal for Mongalla at 07.36, the course taking them over Fagak, Kongor, Awoi and Bor and then the east bank of the Nile. The visibility was bad.

It was very hot and muggy at Mongalla. The temperature did not fall much at night and little relief was gained. *Mongalla—Nimule, 124 miles. (1 hr. 22 mins.)*

Having been warned that Nimule was the last place in the world at which to stop the C.O. had intended to fly to Kisumu in one day. Just before starting, however, the starboard magneto of No. 1103 was found to be defective. This caused a delay of about 3½ hours while a spare one was fitted.

The course to Nimule passed over Rejaf. On this flight also it was too thick for detail of the country to be seen. The ground rises all the way.

The Flight landed at 11.60 hours, a large crowd of natives being there to see them land. They met here Sq. Ldr. Coningham, D.S.O., M.C., D.F.C., and Flt. Lt. Kinkead, D.S.O., D.S.C., D.F.C., the former being on his way back to Cairo after attending a Conference of Governors at Nairobi whilst the latter was in charge of all arrangements for the Flight between Malakal and Nimule.

The crews slept in their hammocks for the first time. All hammocks were provided with mosquito netting which covered the hammock like a bag. The occupant after getting into his hammock could make it mosquito proof by pulling taut the draw strings of the mouth of the bag. All members of the crews found that to get into a hammock when it was pitch dark with the hammock swaying violently, and then to pull the draw string tight before the mosquitoes could get in was a task which required considerable agility and patience.

Nimule to Kisumu, 320 miles. (3 hrs. 43 mins.)

Before leaving Nimule the Chief of the village came up and saluted and though no one could understand what he said, it was easy to discern what he meant. Apparently he remembered the visit to Nimule of a twin-engined aeroplane for he gave in pantomime a very good description of her landing and taking off. This aeroplane must have been the "Silver Queen."

The Flight left the ground for Kisumu at 08.40, the course taking them over Lira, Soroti and Mbale.

The visibility for 1½ hours after "take-off" was poor, but at 10.15 hours the pall which had enveloped them ever since they left Khartum, disappeared. The contrast in visibility was extraordinary for inside ten minutes a visibility of about 1 mile increased to that of about 50 miles. It is an interesting fact that the visibility was bad for so great a distance (over 1,200 miles). The Governor of Malakal said that such conditions were most unusual and could give no explanation of the cause. It seemed improbable that it was all due to sand because after Kosti there is no sand. The leader's assumption is that if it was sand then there must have been a series of terrific sandstorms in the desert between Atbara and Abuhamed, the wind carrying the sand laden air southwards.

The Flight was met at Kisumu by Flt. Lt. Emmett, M.C., D.F.C. (the officer in charge of the Central Section) and the ground party of 1 N.C.O. and 3 airmen. They had erected the spare aeroplane and had also installed most of the stores in a Bessoneau. The rainy season had started at Kisumu when the Flight arrived. It rained in the afternoon at any time after 4 p.m., but never rained in the morning.

Whilst at Kisumu all the aeroplanes were thoroughly inspected, the 25 hour inspection being carried out on all engines. The spare aeroplane (No. 1107), which had been erected by the ground party was tested and both spare pilots were given as much flying as possible.

Kisumu—Mwanza, 240 miles. Mwanza—Tabora, 185 miles. (4 hrs. 38 mins.)

Mwanza was reached at 09.50, in the presence of a large crowd of natives kept in check by a company of the King's African Rifles. The ground was very soft, large pools of water having formed.

As soon as the rain stopped the Flight prepared to leave the ground, only to find that two aeroplanes had become bogged right up to the axles. It took about 50 Askaris of the African Rifles on each aeroplane to manhandle them out. It was found that the best way to get out when bogged was, to stop the engine, dig the ground from before the wheels, raise the tail and lift up along the main spars of the wing together, at the same time pushing on the wheels.

The ground was left for Tabora eventually at 13.15; despite the boggiessness the aeroplane took off very well. They landed at Tabora at 15.18, the Governor of Tanganyika, Sir Donald Cameron, being there to meet them. There was an enormous crowd of natives lining the edges of the aerodrome. On landing the leader received, from the Air Ministry, a cable directing him to land at Nairobi on the return journey, if considered possible.

Bush exists most of the way between Mwanza and Tabora though there are many large grass areas to be found up to halfway. After that the bush becomes very thick and the aircraft pass over some extremely rocky hills. Tabora was easily seen from the air as it is on the railway, with large workshops alongside it. It is the headquarters of the 2nd Battalion of the King's African Rifles.

The following incident narrated by the Officer Commanding the Flight may be of interest as an illustration of the truth of the saying Nothing is ever lost in Africa.

Whilst the Officer Commanding 2nd Battalion King's African Rifles was being taken for a flight his goggles, which he had borrowed from one of us, blew off. They fell in thick bush about six or seven miles south of Tabora. The loss of a pair of goggles was inconvenient for it meant that somebody in the Flight had to fly without them. Early next morning about two minutes before taking off a native was seen running fast across the ground towards us. On reaching us he handed me the goggles, quite undamaged, and then walked away. Where or how he had found them was never discovered but the incident bears witness to the honesty of the native.

During the stay the Flight stopped at the mess of the King's African Rifles. The 2nd King's African Rifles are recruited largely from amongst the Angoni and Yao tribes in Nyassaland, and are an extremely fine and fearless looking lot of men. On parade they

appear very smart. They wear a black fez, blue jersey, shorts and blue puttees without boots. Practically every man wears at least two medals, in particular the Regimental Serjeant-Major, a man of 23 years' service.

The troops could not get over the fact that the Flight had come from Mwanza in 2½ hours. It seemed incredible to them for it was a good 14 days' march away. The Serjeant-Major was offered a flight but he said he didn't want one. On being asked by the Officer Commanding why he didn't, he replied: "Well you see Bwana, the Bwana N'Degi when they first flew learnt to do it by numbers and I don't know the drill!"

Tabora—Abercorn, 300 miles. (3 hrs. 13 mins.)

The Flight left Tabora for Abercorn at 08.25, visibility being extreme. The course was laid to cross the northern edge of Lake Rukwa over the Tanganyika escarpment to Kasanga on Lake Tanganyika and from there down the Lulu to Abercorn.

Before the Flight left England a dual source of supply of petrol and oil to Abercorn had been arranged, one lot by rail and steamer from Dar es Salaam via Ujiji and the Lake, the other by rail and porters from Pretoria via Livingstone. Both lots arrived in time though the consignment from Livingstone only arrived two days before the aeroplanes and that only after tremendous exertions on the part of porters. *Abercorn—N'Dola, 342 miles. (4 hrs. 11 mins.)*

Abercorn was left for N'Dola at 09.54. In spite of the low density of the air (.78) no wind, and 8 gallons of petrol extra in the back seat, the aeroplanes got off well. The course took them over the northern edge of Lake Bangweulu from thence to N'Dola crossing a strip of the Belgian Congo between Bangweulu and the Luapula river. Except for the forbidding looking marshes of Lake Bangweulu and the mangrove swamps of the Luapula river there is forest all the way.

When south west of Lake Bangweulu the aircraft saw ahead what looked like a wall of very heavy rainstorms which stretched right across the course. Course was altered to the northward to avoid some of these and by diving between the gaps of others the aircraft managed to avoid them.

The Flight landed at N'Dola at 14.05 in the presence of a large crowd, the whole European population being there.

N'Dola—Broken Hill, 104 miles. (1 hr. 21 mins.)

The Flight took off in formation at 10.00 for Broken Hill, landing there at 11.21, the whole population turning out to see the landing. Thick forest exists between N'Dola and Broken Hill. There were one or two open spaces but these were marshy valleys.

Broken Hill—Livingstone, 303 miles. (3 hrs. 21 mins.)

The Flight left Broken Hill for Livingstone at 08.46, the course taking the aeroplanes over the Kafue River, Mazabuka, Batoka and the Kalomo River. A good deal of cloud was encountered which necessitated flying at about 9,000 ft. above sea level most of the time. The visibility was extreme. The spray from the Victoria Falls at Livingstone was sighted over 40 miles away.

Livingstone was reached at 12.07, the aeroplanes having first flown over the falls. The Governor and Lady Stanley were there to meet them. The party were motored out to see the Matoppos Hills which are about 25 miles south-east of Bulawayo where Cecil Rhodes and Sir Starr Jameson lie buried in the top of the largest kopje. Close to their graves stands the memorial to Major Wilson and his party of 30 men who were surrounded and killed to a man on the Shangani River by the Matabele in the Matabele war.

Livingston—Bulawayo, 243 miles. (3 hrs. 6 mins.)

The Flight took off from Livingstone at 10.08 and after saluting the Governor shaped course for Bulawayo. The course took the aircraft over Wankie, Malindi, Gwaii, Nyamdlovu and then along the railway to Bulawayo.

Bulawayo—Palapwe Road, 200 miles. (2 hrs. 31 mins.)

The Flight took off in formation at 10.09 and after saluting the Governor shaped course for Palapwe Road. The course lay past the Matoppos to Francis Town where course was altered for Palapwe. Palapwe was reached at 12.40, the whole white population and many natives being there to see the landing. The Commanding Officer was introduced by the Resident Magistrate of Serowe to Tshkedi Khama the Regent of Bechuanaland.

Tshkedi Khama asked if the Flight could fly over Serowe, which is the capital of Bechuanaland, whilst the Flight was at Palapwe. This was done on the following day.

No. 1105 had to return and land owing to oil trouble but the remainder after escorting her back continued the flight over thick bush country to Serowe. Serowe is some 30 miles north-west of Palapwe and is quite a large native town with 20,000 inhabitants.

The Flight did not stop long over Serowe for the noise of the engines had stampeded all the cattle and donkeys in the place. They could be seen charging up and down the roads at full speed. It was an amusing sight to watch, but the Commanding Officer decided, in the interests of Serowe, to cut short the demonstration and return. On landing at Palapwe the natives could not believe that the aeroplanes had been to Serowe and back in an hour as it would take them two days.

Palapwe Road—Pretoria, 232 miles. (2 hrs. 43 mins.)

The Flight took off in formation and left Palapwe Road for Pretoria at 07.31 hrs. After crossing the Limpopo River the tops of a range of hills which had to be crossed were observed to be covered in clouds. To get over the aeroplanes were compelled to come down low, about 50 ft. from the ground and dodge about considerably. The railway was met about 35 miles north of Pretoria and then followed.

On arrival at 10.14 over the aerodrome hundreds of cars and masses of people were assembled. The edge of the concrete apron leading to the hangars was lined with South African Air Force aeroplanes. On landing the Flight was met by General Brink (Chief of the General Staff), Colonel Sir Pierre van Ryneveld and the Mayor of Pretoria.

The aeroplanes were then wheeled into hangars and after lunch work was started on giving all aeroplanes the 25 hours' routine overhaul. Beyond one or two minor adjustments everything was found to be in perfect order. The wood shrinkage was considerable and it was found necessary to tighten up all spar bolts. Flt. Lt. W. E. Reason was in charge of the ground organisation on the Southern Section. *Pretoria—Johannesburg, 35 miles. (1 hr. 1 min.)*

The Flight left Pretoria at 09.25 in company with 14 aeroplanes of the South African Air Force for Johannesburg. The whole formation

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was 19 strong as the spare machine was taken as well. The British Flight was in the van, the South African Flights astern.

Before landing at Johannesburg at 10.26 hrs. the formation flew the whole length of the Reef which runs for about 20 miles east and West of Johannesburg. As soon as the Flight landed at Johannesburg the South African aeroplanes returned to Pretoria. A large crowd was assembled. On landing the Mayor of Johannesburg welcomed the Flight on behalf of the city.

Johannesburg—Bloemfontein, 227 miles. (2 hrs. 42 mins.)

The Flight left Johannesburg for Bloemfontein at 02.33 hrs. on Apr. 18. Although the density of air at Johannesburg gave a true height of about 8,000 feet, no difficulty was found in taking off.

On landing at Bloemfontein No. 1102 reported a leaky oil tank. Oil had luckily only started running out about half-an-hour before the landing. On examination it was found that the port side of the tank was badly split. Repairs were made at once, but in the meantime a wire was sent to Pretoria to despatch a spare tank. This was received on the 9th and installed straight away.

Bloemfontein—Beaufort West, 304 miles. (3 hrs. 37 mins.)

The Flight took off from Bloemfontein in formation and left for Beaufort West at 09.41 hrs. The visibility was extreme, wind about 10 m.p.h. from the east.

The compass course lay over Jagersfontein and the Orange River past Philipstown and De Aar Junction over Table Mountain direct to Beaufort West. The Flight took up close formation over Jagersfontein as a request to fly over the town had been received.

Beaufort West—Cape Town, 266 miles. (3 hrs. 41 mins.)

The Flight took off in formation for Cape Town at 09.26 hrs., their course taking the aeroplanes along the railway, over Maljesfontein, over the Hex River Mountains past Worcester and over the Drakensberg Mountains. The visibility was extreme, the air being wonderfully clear. The Karoo desert looked like the bed of an ancient sea, baked brown by the sun.

After Maljesfontein the country begins to rise and becomes very mountainous, especially to the south of the railway.

As they were crossing the Drakensberg the leader noticed No. 1102 climbing vigorously till finally lost above him at about 16,000 ft. On taking up close formation some 10 miles north of Wynberg there was still no sign of No. 1102; but as the Flight passed Wynberg aerodrome No. 1105 signalled to the leader that No. 1102 had landed.

The Flight was met by the Minister of Defence, the Chief of the General Staff and the Mayors of Wynberg and Cape Town.

No. 1102 reported that when over the Drakensberg Mountains the oil tank had again split. The pilot had climbed high so as to be able to have more time to select a landing ground should the engine seize. On finding the oil pressure holding he had opened his throttle and dived for Wynberg at full speed, arriving some 20 mins. before the remainder of the Flight. It was disquieting to find a brand new tank splitting after only 6 hrs. flying; it was decided therefore to get a new one made without delay locally. Further examination revealed the oil tank of No. 1103 to be cracked.

Gearing Ltd., of Cape Town, made four new 20-gauge copper tanks from the design that was supplied and these were installed. They stood up to their work very well and were still in the aeroplanes when the Flight arrived in England.

The greatest assistance was received from the Headquarters of the Cape Garrison, a guard being provided at the aerodrome, and all cables and telegrams in connection with the Flight being dealt with by them.

THE RETURN JOURNEY.

Cape Town—Victoria West, 333 miles. (3 hrs. 6 mins.)

The Flight took off in formation from Wynberg at 09.50 hrs. After saluting His Excellency the Governor-General, who was present to see the departure, course was shaped for Victoria West.

Victoria West—Kimberley, 207 miles. (2 hrs. 38 mins.)

Owing to the sand the departure was made by aeroplanes singly at 10.35 hrs. and after flying in close formation over the aerodrome they left for Kimberley. The course took them over the Orange River near Hope Town and then parallel to the railway to Kimberley. The weather was superb with extreme visibility. Kimberley was reached at 13.11 hrs. The Mayor and a large crowd being present.

Kimberley—Pretoria, 294 miles. (3 hrs. 28 mins.)

The Flight took off in formation at 10.36 hrs. and shaped course for Pretoria. The course lay over Boshof, Hoopstad, Potchefstroom and Johannesburg.

During the stay in Pretoria opportunity was taken thoroughly to overhaul the aeroplanes, controls being renewed where necessary. The engines were given the routine 25 hrs. overhaul, and all aeroplanes were swung for deviation.

As the return flight included Nairobi a new time-table was prepared.

The return flight is not described since most of the country was the same as that already passed over.

Tabora—Kisumu.

The Flight left Pretoria early in the morning of May 3. Bulawayo was reached without incident the same day after refuelling at Palapwe Road. A stay was made at Bulawayo till the 5th. Livingstone was reached on the 5th; N'Dola via Broken Hill on the 6th; Abercorn on the 7th; Tabora on the 9th, and Kisumu on the 11th.

Between Kisumu and Tabora the Flight, when in a mountainous area 80 miles south of Kisumu, ran into a series of blinding rain storms which stretched as far as Kisumu. When not in rain low clouds were met with which were down to the ground in places. On arrival at Kisumu it was found that the fabric on the aircrews of Nos. 1102, 1104 and 1105 had in places started to strip.

Kisumu—Nairobi, 178 miles. (2 hrs. 7 mins.)

On May 12 the Flight flew to Nairobi, the course being via Mau Summit (10,500 ft. above sea level) past Nakuru and over Lake Naivasha. Nairobi was reached after a flight of 2 hrs. 7 mins. An enormous crowd had assembled to see the landing as no aeroplanes had been seen there before.

Nairobi was left on the morning of the 15th at 10.27 hrs. The ground was waterlogged and columns of spray rose as each aeroplane took off. As the clouds were low everywhere course was shaped west, south of the N'Gong Hills over the Migungani plain and then north to Kisumu up to Kerocho Valley. On arrival at Kisumu a snake which had crept in and twined itself round the spokes of the leader's

port wheel, whilst at Nairobi, was still there. The 25 hr. engine routine overhaul was carried out on all aeroplanes between May 15 and 16.

Kisumu—Jinja, 116 miles. (1 hr. 24 mins.)

A start was made for Mongalla via Jinja at 06.36 hrs., but at 07.20 hrs. the Flight was compelled to turn back owing to heavy rain-storms completely barring the path. A fresh start was made at 14.18 hrs. on the same day, Jinja being reached at 15.42 hrs. The weather just beyond Jinja appeared extremely black and threatening. The storm the night before had brought down the wires between Kisumu and Jinja. All telegrams for Uganda from Kenya (87 all told) were, therefore, taken by the Flight.

Jinja—Mongalla, 346 miles.

Mongalla was reached without incident after a flight of 4 hrs. 12 mins. There had been rain two days previously and the landing ground was very soft in certain places. No. 1104 became bogged while taxiing in, and again when taking off the next morning. The other aeroplanes were fortunate not to get bogged also as the tracks of No. 1104 were only 3 ft. to the left of the track of the others.

Malakal was reached on the 20th and Khartum on the 21st. It was very hot at Khartum, the temperature being 115° in the shade.

Khartum was left on the 23rd, Atbara being reached without incident. That evening a heavy sandstorm struck Atbara at sunset. The visibility next day was consequently very low. On the 25th, though the visibility was still very low the Flight left for Halfa. At Abu Hamed the visibility improved. Halfa was reached without incident after a flight of 4 hrs. 22 mins.

Halfa was left next morning as the sun rose, Aswan being reached without incident in 2 hrs. 34 mins. The Flight left Aswan again at 09.26 hrs. for Assiut but had to return after 25 mins. flying owing to the oil pressure in No. 1104 falling. No. 1105 reported similar trouble. The aircrew of No. 1102 was changed as the pilot reported excessive vibration. Some of the difficulties arising when flying over Africa are illustrated in the following paragraph from the leader's report:—

"On landing a second time there was nobody at the aerodrome and we could not open the petrol store. As there was a strong head wind it was essential to put in the amount of petrol used up on the abortive flight. After having waited for nearly three hours for someone to arrive I gave orders for the door to be broken down. This could not be done and we only succeeded in breaking the lock. Finally in desperation I bought 32 gallons of M.T. spirit in the Aswan bazaar and had that put into the tanks. Aswan was finally left at 13.58 hrs., Assiut being reached at 16.58 hrs. It was very hot when we took off, the water rising to 96° and the oil to 74° before reaching cooler air at 5,000 ft. Over Sohag it looked as if another sandstorm was coming on and although we were at 7,000 ft. it was extremely bumpy. No. 1105 was thrown about to such an extent that a flying wire parted. Later we found that we had passed over a small sandstorm. All aeroplanes nearly crashed on landing at Assiut owing to striking ridges which were not marked and could not be seen from the air."

Assiut was left at 06.05 hrs., Heliopolis being reached at 08.35 hrs. When near Helwan an escort from Heliopolis joined the Flight and took station on either quarter.

THE FLIGHT HOME.

The route selected was as follows:—Aboukir, Sollum, Suda Bay (Crete), Phaleron Bay (Athens), Corfu, Brindisi, Naples, Orbetello, Berre (near Marseilles), Crete, Hourtin (near Bordeaux), Brest, Lee-on-Solent.

The land flight having finished on May 27, the Cape Flight flew to Aboukir on May 29 and there work was at once started on overhauling the aeroplanes. Each aeroplane was thoroughly overhauled and cleaned, the fabric being given a fresh coat of dope. The engines were then given the usual 25 hr. routine overhaul.

New aircrews suitably sheathed for float-plane work were also fitted.

Aboukir was left on June 9 at 10.15 hrs. and the Flight arrived, according to programme, at Lee-on-Solent on June 21 at 13.02 hrs. The total flying time taken by the four aeroplanes over this part of the route was approximately 164 hrs. The actual time for the leader's aeroplane was 40 hrs. 30 mins.

Except for an aircrew changed on one aeroplane at Berre no major repairs were necessary.

The programme was adhered to with one exception, but this was only made possible by the efficiency of the ground organisation prepared in advance together with the help which was received at every place. The Greek, Italian and French authorities were helpful.

The Flight experienced good weather until they reached Berre. At Berre a mistral commenced to blow the night before they left. In the morning it was blowing nearly a full gale from the N.N.W. Berre is situated in a lake, which enabled the aeroplanes to take-off, but as the wind was dead ahead and continued without abating the whole day, a stay was made at Cette. Next day though still blowing hard a start was made for Hourtin.

At Toulouse the wind dropped and fog was encountered. The Flight was therefore forced to fly at about 100 ft. down the Garonne to Bordeaux, where the fog lifted. Between Brest and Lee-on-Solent fog was again met with necessitating the Channel being crossed at about 50 ft. until the Needles were sighted.

Except for the flight from Brest to Lee head winds were encountered all the way home.

When crossing the mountains of Calabria between Brindisi and Naples, a curious phenomenon was experienced. At a point about 6 miles east of the main ridge the leader's aeroplane, for no apparent reason, lost height rapidly. Although the engine revolutions were 1,760 when the aeroplane commenced to lose height at 8,000 ft., it only stopped sinking at 6,800 ft. when the revolutions were increased to 1950. It is assumed that the aeroplane must have struck a down current of air (a head wind was blowing) as after about 10 mins. it started to climb again with revolutions reduced to 1,800. The bumps over Calabria proved bad.

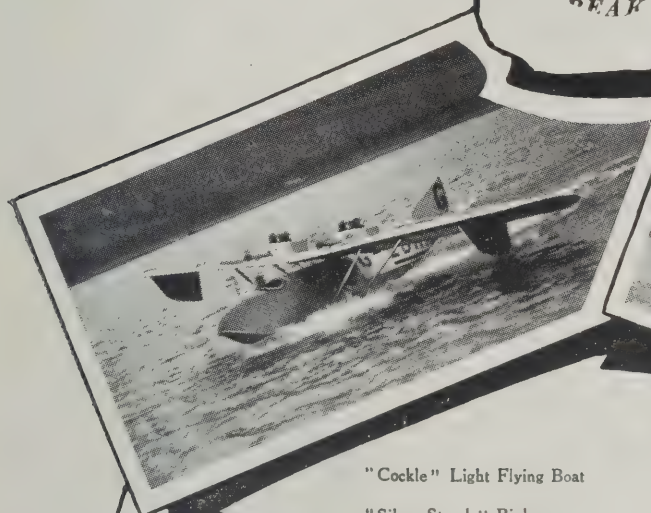
The Flight has been of great value to the Royal Air Force, as it has provided experience in long distance flying over new country and through changing climates. It should clearly prove to the World in general the reliability, and the efficiency of British aircraft and engines, and the high state of efficiency of the Royal Air Force, the objects of the flight having been completely achieved.

Leading the World

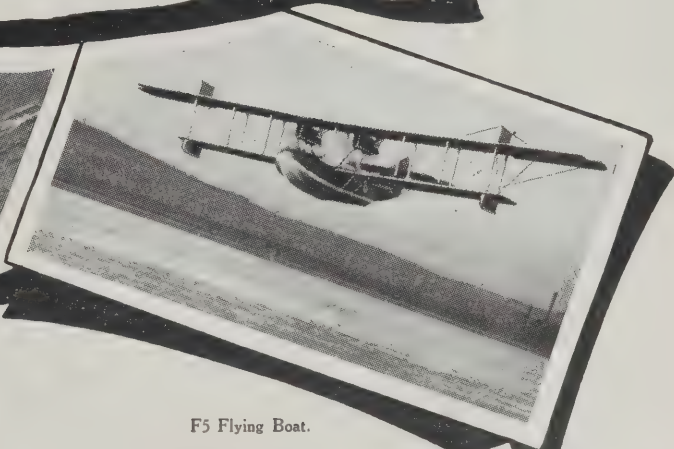
An extract from
"THE TIMES"
 of 20th August, 1926.

Short Brothers are now
 designers and constructors of all-metal floats.
 Other all-metal aircraft are in construction,
 and Great Britain may well lead the world in
 the all-metal construction of seagoing aircraft
 as a result of the independent work done at
 Rochester during the last few years.

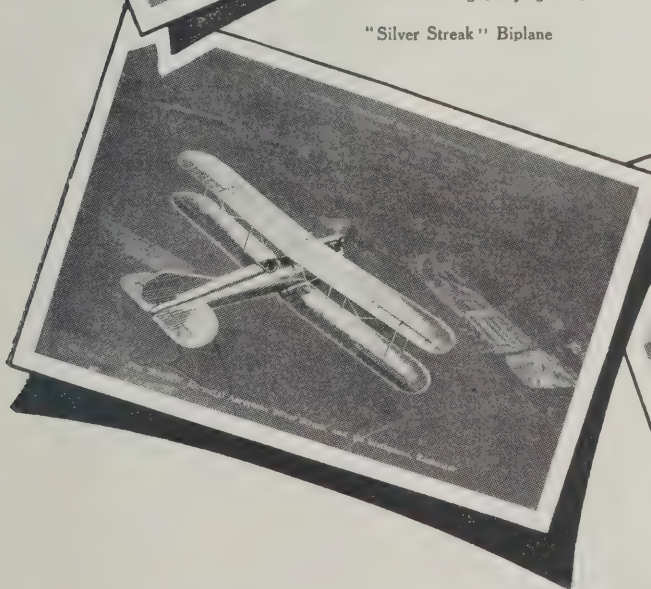
BEAKTOWN ON THE



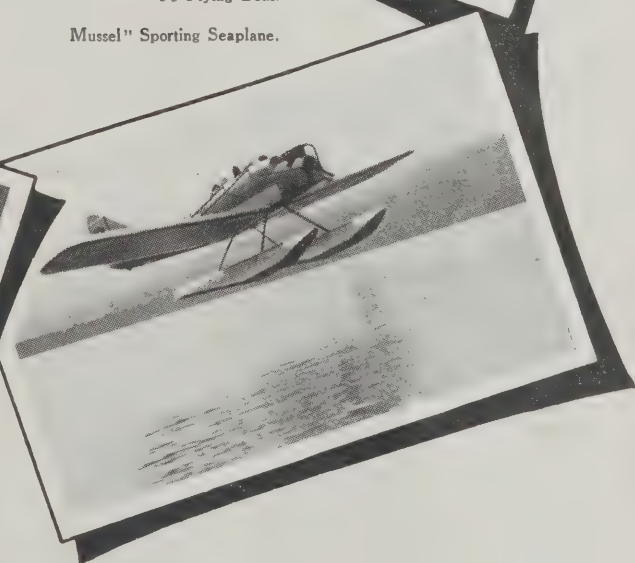
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THE TREND OF AIRCRAFT DESIGN IN FRANCE.—II.

By W. H. SAYERS.

TYPES OF CONSTRUCTION.

Just as the French Aircraft Industry produces a greater diversity of aerodynamic types of aircraft than our own, so also do they use a wider variety of types of construction.

The conventional wooden-framed wire-braced class of structure is still in favour with certain old-established firms—for instance Farman and Caudron. The reasons advanced for the retention of this type of structure are those used in this country—ease and cheapness of manufacture and the adaptability of this type of construction to the rapid production of new types.

On the whole the advantages of this type of construction are apparently more fully achieved in France than in England. Designs are pretty obviously not scrutinised in detail by the French Section Technique in the thorough-going fashion adopted by our Air Ministry. Structural strength is not calculated; it is checked by loading tests on a sample machine, and if the sample stands the test, the methods by which the required results are obtained are relatively unimportant.

There are, one gathers, certain regulations, such, for instance, as the prohibition of welded joints in tension, but generally speaking the designer takes—if he is not allowed—liberties in the design of fittings that would not be tolerated here. This remark incidentally applies to other than the wooden-framed types.

Of these timber-framed machines the majority use duralumin in undercarriage and interplane struts where British machines would use steel tubes. These duralumin struts are usually built up from sheet to streamline profiles, and in many cases the conventional two strut V for undercarriages is a single unit of the trouser type pressed out of sheet and rivetted.

Some wooden-framed machines are of special construction. Pierre Levasseur builds up complete fuselage girders of a series of laminations of poplar, glued together and then covered with three-ply. This type of structure is peculiar to this firm, and has been used for some years, apparently with satisfactory results.

The S.I.M.B. (Bernard) machines are all built with stressed skins. The Bernard Fighter at the Show is of timber, but the firm has built all-metal machines having very similar structural features.

The particular novelty is the wing structure. Instead of the normal two spars, a number of relatively narrow stringers are employed, and these are tied together by the skin of the wing in such a way that the whole forms a series of box compartments. In the wooden machine the skin, which is also the web of the wing girder, is of three-ply.

Nieuport-Astra still remain faithful to the true monocoque fuselage, produced by winding a series of strips of very thin veneer in spirals of alternating hand on a collapsible former. There is an interior reinforcement of stringers and frames—somewhat more extensive than was employed in early types—and the framing over the engine space is now entirely of duralumin.

In the Nieuport either timber or duralumin wings may be used. It is understood that the firm itself believes in wood still, but has found it discreet to offer the alternative.

METAL CONSTRUCTION.

In France, "metal construction" means light alloy construction. The only exception to this rule that could be found in the Show itself was the steel-tube longerons in the front end of the fuselage of the S.E.C.M. three-engined skeleton. There was also the Fiat with steel spars and a steel-tube fuselage, but that is not French.

In the majority of duralumin machines fabric covering is used. The Avimeta and the Wibault are exceptions, being entirely covered with metal.

All the metal aircraft are said to be so designed that cheap and rapid production is possible. The methods by which this common quality is attained, however, vary very widely. There are, in fact, two totally opposed schools of thought.

The one seeks to achieve the desired object by building up a structure from standard tubes, angles, channels and plain sheet, which can be put together with a minimum of workshop equipment, given a reasonable supply of skilled labour.

The other takes the view that production dependent upon the manual skill of the labourer cannot be cheap, except where the quantity produced is very small, and so holds that a complete equipment of automatic or semi-automatic machinery, jigs, etc., is essential, and that given the necessary equipment and output, anything can be produced cheaply.

This school consequently produces machines composed of elaborate special sections, and of complex and ingenious machined or stamped fittings which doubtless can be made at a reasonable cost given a big enough output, but which do not look cheap.

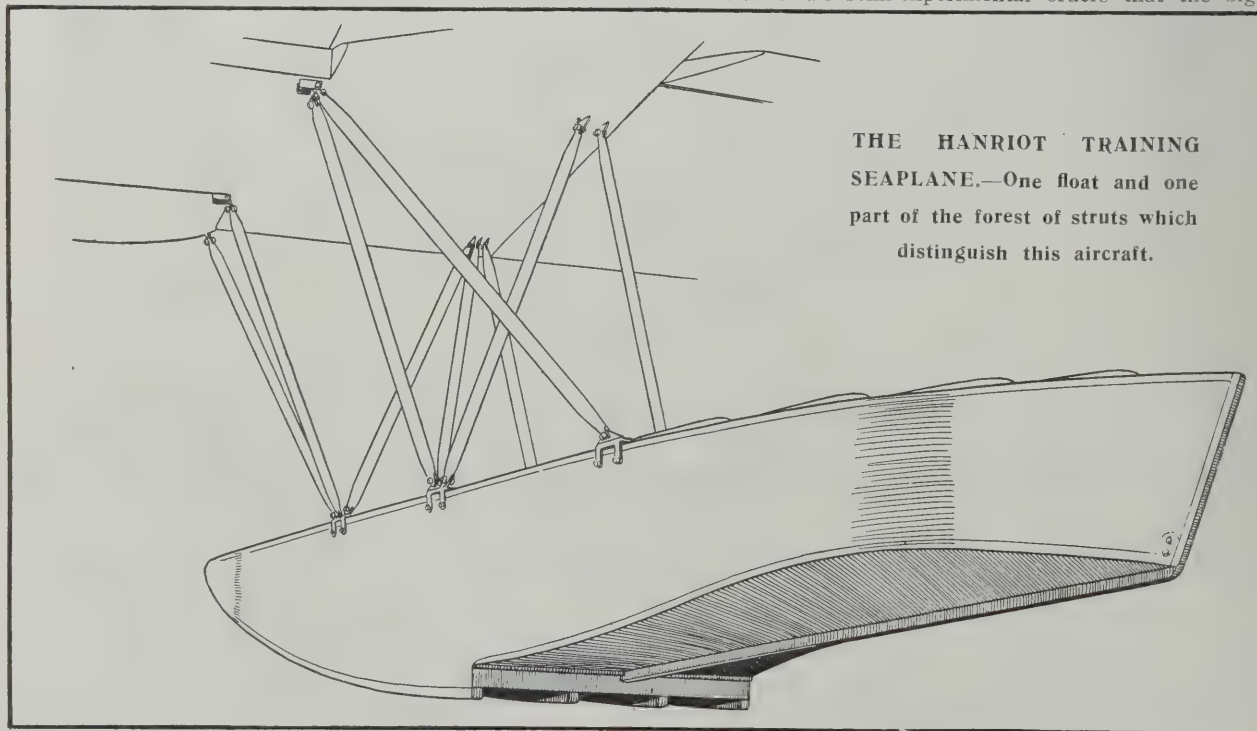
STRATEGY AND ECONOMICS.

In the long view, the latter school of thought is probably the soundest. The nation which possesses aircraft factories equipped for aeroplane manufacture on so-called mass-production lines will be at a great advantage when the next big war breaks out.

[Always provided that the types on which they have decided for mass-production are a year in front of their time. Let us not forget the disaster caused to the R.F.C. in 1915 by the mass-production of the B.E.2c.—C. G. G.]

But one may wonder whether any of the firms which have laid themselves out to meet the emergency to-day will survive the burden of their overhead charges until such time as they can begin to secure an adequate return on their capital expenditure. It is certainly a matter for careful consideration by the various Governments—who, after all, are chiefly interested in this problem—and it might have been thought that in France at any rate a firm which had the enterprise to equip itself against the emergency of war could depend at least upon official maintenance.

It is said however that the French Government dissipates so much of its Aviation Budget on keeping the small firms alive with small semi-experimental orders that the bigger



THE HANRIOT TRAINING SEAPLANE.—One float and one part of the forest of struts which distinguish this aircraft.

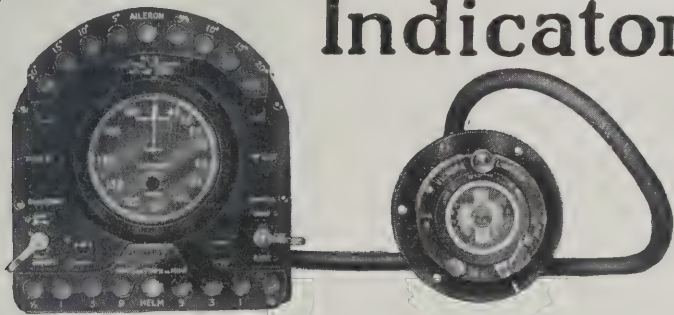
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works are barely able to keep themselves out of the Bankruptcy Court. How much truth there is in this statement cannot be ascertained, but it sound plausible.

[One agrees with the policy of keeping the small firms alive. It promotes competition, affords opportunities for young designers with brains, and it is an insurance against the forming of a ring or monopoly.—C. G. G.]

PROTECTION AGAINST CORROSION.

The French appear to put great faith in the ability of their light alloys to resist corrosion. Despite the fact that steel fittings—not stainless steel—are used in conjunction with duralumin frames, it seems quite unusual for any protective coating to be used between the two materials. Even in the cases of the Breguet (duralumin) and the Avimeta (alferium) seaplane floats there are no signs of the use of any protective coating.

The British "Anodic" treatment, whereby a very heavy and tough coat of aluminium oxide is produced on light alloy components by an electrolytic process is quite evidently not employed. But one is told that the Section Technique has lately sent representatives to this country to investigate it.

It would therefore seem either that the French alloys are superior to our own—which is highly improbable—or that French all-metal aircraft must suffer fairly rapid depreciation from corrosion.

[Which latter seems likely, seeing that quick corrosion means quick depreciation, writing-off, and replacement. And replacement, regardless of cost, is easy in a country which does not trouble to balance its Budget or pay its debts.—C. G. G.]

CONTROLS.

As has already been mentioned, French tail-units look inadequate to British eyes. To some extent this is offset by the greater length of fuselage usually found in all types of French machines. This feature is most noticeable in the case of rudders, which, with certain marked exceptions, are almost ludicrously small when judged by British standards.

Now a very small rudder may give reasonably adequate control above the stall, and it is only in the stalled condition that a large rudder becomes really valuable. And in this condition the real use of the large rudder is to overcome the reversed yawing moment of the ailerons.

French ailerons as a general rule are also small to British eyes. In the majority of cases their chord is very small. Such ailerons give a very light and effective control at normal flying speeds, and are relatively ineffective, though still light at low speeds. They may however produce small yawing moments at or beyond the stall and so make less demands on the rudder.

Horizontal tail surfaces approach more nearly to British ideas of total area and "volume ratio." Proportions of fixed to movable horizontal surface vary within wide limits. High-speed fighters may be found with very small fixed surfaces and enormous balanced elevators, heavy bombers with a mere fringe of elevator attached to a large fixed tail.

In the absence of a very complete analysis of each particular case it is impossible to say definitely whether these abnormalities are justified, but they suggest that the French

are rather more casual than are we in checking designs for stability and tail-loads. It is at any rate known that one very recent French fighter of exceedingly high performance has been a source of serious complaint from pilots who find that it cannot be held steady in a dive. This definitely suggests inadequate tail surface.

Tail-planes adjustable in the air are not unknown in France, but do not appear to be anything like so widely used as in this country.

On the other hand, no French designer of a multi-engined machine seems to be satisfied unless he has devised some form of fin-setting gear to relieve the load on the rudder bar when one wing engine is out of action.

This, of course, may be the direct result of the small area of French rudders generally.

POWER PLANT INSTALLATION

Apart from a few small aircraft for training and touring work, the great majority of machines at the Paris Show are fitted with engines of 400 to 500 h.p. The tabulated data of aeroplanes given for this exhibition in THE AEROPLANE of December 8 relates to fifty-one types of aircraft. Thirty-seven of these had one or more engines within these limits. Taking French machines alone, thirty out of forty used such engines. And the table engine data in the issue for December 15 shows that there are some fifteen types of French engines of this power.

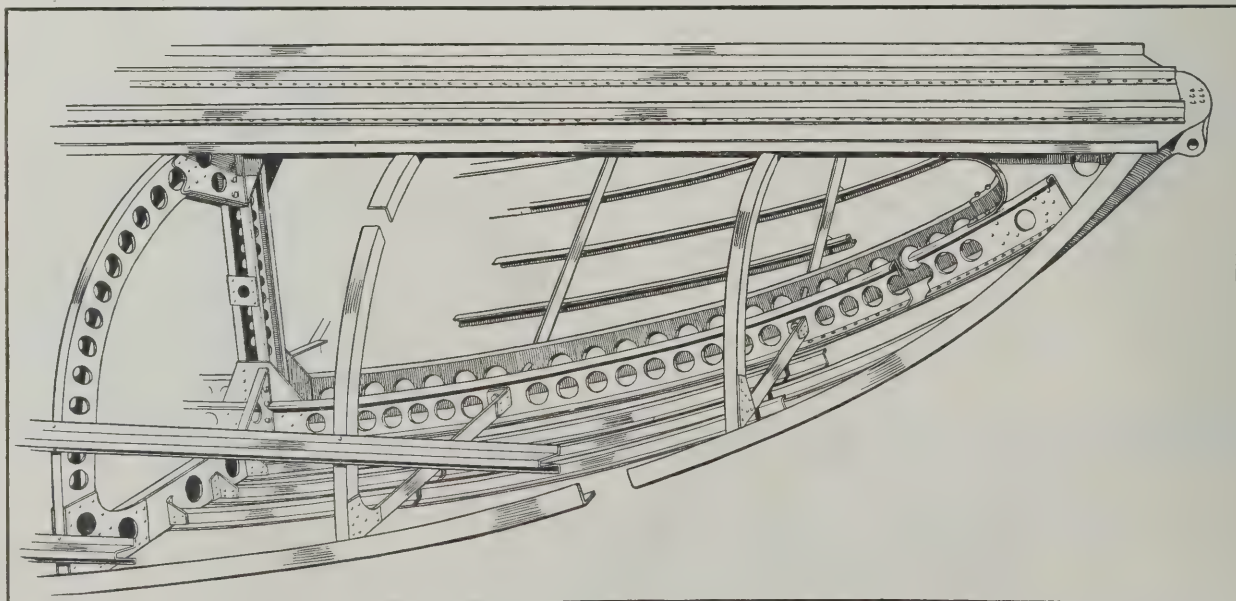
There is nothing particularly French about this predominant popularity of the 400/500 h.p. engine—it may be found in this country, in the United States, in Italy, and, now that the restrictions on German aircraft have been removed, it is beginning to be apparent in Germany. What is peculiarly French is the large variety of alternative engines of this power.

This variety of engines has one very noticeable effect, particularly in the military two-seater and larger types. It appears to be almost the rule in France to design all such machines so that they may be equipped with any of the available engines in the required power limit. That is the fuselage ends at the fire-proof bulkhead behind the engine mountings, and a series of separate and interchangeable noses, carrying alternative engines are provided.

Alternative engine mountings for engines are widely different in form as the Jupiter, the Broad Arrow Lorraine and Farman types, and the twelve-cylinder Vee Renault and Hispano engines were shown for one and the same machine, and in one case the centre section of a twin-engine machine (the Dyle et Bacalan) was exhibited with a Jupiter on one side and a Lorraine-Dietrich on the other.

There is a good deal to be said from the practical point of view of this standardisation of interchangeable power units. It is true that some sacrifice in the efficiency of the aeroplane may be necessary to secure interchangeability of engines in this way.

On the other hand, experience in the last war proved that under war conditions it will often prove impossible so to balance engine and aircraft production that machines can always be equipped with the particular type of engine for which they are designed. If the habit of designing for interchangeable power plants is adopted, this difficulty when it is encountered can be overcome with much less delay than



THE BREGUET DURALUMIN FLOAT.—This sketch shows the details of construction of the floats for a Breguet XIX. It is a typical example of the highest class of French metal construction.



Filling up with Shell at Malta

Talk of the Aero World— Stack-Leete Overseas Flight on Shell

ON THE MOST hazardous part of their London-Karachi flight, over the water that separates Malta from the North African Coast, Mr. Neville Stack and Mr. Bernard Leete of the Lancashire Aero Club, used straight Shell Aviation Spirit. This was not mixed with a single drop of any other fuel or dope of any kind.

Every one *au fait* with Aeronautics is talking about these plucky airmen who are so successfully demonstrating what can be done with light aeroplanes, such as the De Havilland Moths (A.D.C. Cirrus Mk. II engines) which they are using.

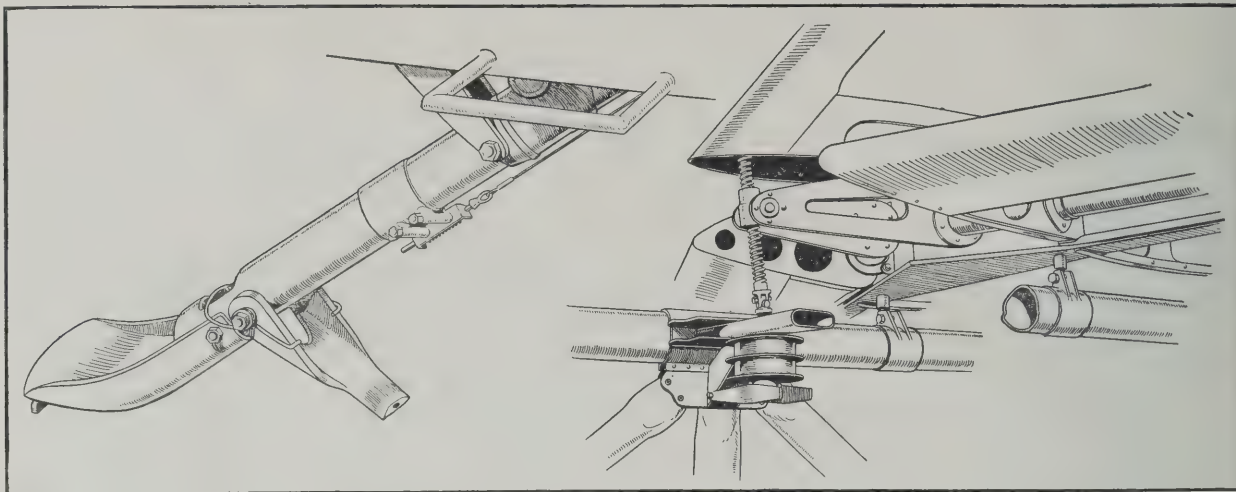
The overseas part of the flight—230 miles constitutes a world's record for light aeroplanes—and for Shell.

SHELL

The Well-balanced Petrol



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DETAILS FROM THE PARIS SHOW.—Left, the tail skid of the Fokker C.V. The sprag is normally folded up, but may be released at will by the pilot to serve as a brake. Right, tail-adjusting gear of the Mureaux monoplane. Instead of moving the tail plane bodily this gear rocks the leading edge about hinges on the front spar, and thus alters the camber.

would be the case if such a change meant structural alteration to the aeroplane.

These interchangeable engine mountings are practically invariably of duralumin construction. They may be either of tubes, entirely built up from sheet, or combinations of the two forms, but are invariably attached by four points, and are designed to carry the appropriate radiators, oil-coolers and accessories proper to their own particular engine, so that as far as is humanly possible change of power plant means no other work than removing the one nose and replacing it by another, and making the necessary fuel and control connections.

FUEL SYSTEMS.

Practically all French aircraft are fitted with pump feeds to the carburettors from fuel tanks placed in the bottom of the fuselage. This is particularly true of military machines.

To this end all French engines are fitted with duplicate mechanically-driven petrol-pumps, usually of the well-known A.M. type, although a type manufactured by M. Lamblin, of radiator fame, is growing in popularity.

It appears that petrol-pump troubles are by no means unknown, and despite the invariable duplication of the pump system one well-known engine maker affirms that more forced landings occur with his engines from petrol pump failure than from any other cause.

The reason for the adoption of this system is that French military aircraft are required to be fitted with fuel tanks that can be dropped in case of a fire, and that this requirement rules out gravity feed systems, except under very unusual conditions, for the tank must be in the bottom of the fuselage or of the lower wing for a clear drop to be possible.

In some cases where, owing to the size of tank or other structural difficulties, the dropping tank cannot be used, jettisoning valves by which the tank can rapidly be emptied are required, and here again the necessity of giving a clear drop to the discharged petrol means keeping the tank low down in the machine.

In some quarters the value of this method of getting rid of petrol seems to be under-estimated. It may be granted that once a machine is well alight, releasing the fuel may produce very unpleasant results. But this is certainly not the intention underlying the arrangement.

French military aircraft as a whole have higher landing speeds than our own, and some of the machines which apparently are to be used for bombing purposes would be mighty unpleasant to land in bad country as a result of engine failure when nearly fully loaded. By emptying the tanks when such an emergency arises, the load is appreciably reduced, the chances of avoiding a crash increased and the risk of fire after a crash is greatly reduced.

Also a fire in the air fed by a broken petrol pipe from the main tank will usually be a local affair for some time. If the tanks can be emptied before it spreads very far it may be fairly easily suppressed—or at least the pilot may pull off a landing of some sort and the crew escape with their lives.

Another feature of French military aircraft petrol systems is that fuel tanks are practically invariably of duralumin or other light alloy, and are mostly of the rubber-covered crash-proof type.

For the tanks rivetted joints, with some form of plastic sealing material to render them petrol proof, are used. Welding, one gathers, is not permitted. The crash proofing is generally of the Imber type, consisting of a layer of rubber proofing about one inch thick, a coating of doped fabric and a wire net outer armouring.

COMMERCIAL AERONAUTICS.

The London Terminal Aerodrome.

ANALYSIS OF FIGURES FOR THE WEEK BEFORE LAST.

Trips per Day.—Monday, 2; Tuesday, 8; Wednesday, 13; Thursday, 12; Friday, 9; Saturday, 10; Sunday, 0.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines 23, passengers 76, freight 12 tons.

AIR UNION:

Paris—London: Machines 11, passengers 22, freight 12 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 9, passengers 10, freight 1½ tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 11, passengers 12.

PRIVATE:

Machines 0, passengers 0.

Total number of trips by British Machines, 23, carrying 76 passengers. Foreign Machines, 31, carrying 44 passengers.

Comparative Figures:

Week ending Dec. 19:

Machines, 54; Passengers, 120; Crews, 65; Total personnel, 185.

Corresponding week, 1925:

Machines, 42; Passengers, 110; Crews, 51; Total personnel, 161.

Corresponding week, 1924:

Machines, 35; Passengers, 82; Crews, 39; Total personnel, 121.

Corresponding week, 1923:

Machines, 51; Passengers, 87; Crews, 77; Total personnel, 164.

Corresponding week, 1922:

Machines, 52; Passengers, 168; Crews, 100; Total personnel, 268.

Corresponding week, 1921:

Machines, 49; Passengers, 108; Crews, 73; Total personnel, 181.

Corresponding week, 1920:

Machines, 10; Passengers, 9; Crews, 18; Total personnel, 27.

ANALYSIS OF FIGURES FOR THE PAST WEEK.

Trips per Day.—Monday, 15; Tuesday, 10; Wednesday, 13; Thursday, 14; Friday, 13; Saturday, 0; Sunday, 0.

IMPERIAL AIRWAYS LTD.:

London—Paris; London—Ostend—Brussels—Cologne; London—Rotterdam—Amsterdam: Machines, 26; passengers, 90; freight 11 tons.

AIR UNION:

Paris—London: Machines 15, passengers 24, freight 13 tons.

K.L.M.:

Amsterdam—Rotterdam—London: Machines 11, passengers 17, freight 2½ tons.

SABENA:

Machines 0, passengers 0.

DEUTSCHE LUFTHANSA AG.:

Berlin—London: Machines 10, passengers 9.

PRIVATE:

Machines 3, passengers 5.

Total number of trips by British Machines, 29, carrying 95 passengers. Foreign Machines, 36, carrying 50 passengers.

Comparative Figures:

Week ending Dec. 26:

Machines, 65; Passengers, 145; Crews, 80; Total personnel, 225.

Corresponding week, 1925:

Machines, 23; Passengers, 76; Crews, 27; Total personnel, 103.

Corresponding week, 1924:

Machines, 45; Passengers, 103; Crews, 56; Total personnel, 159.

Corresponding week, 1923:

Machines, 11; Passengers, 17; Crews, 16; Total personnel, 33.

Corresponding week, 1922:

Machines, 41; Passengers, 95; Crews, 81; Total personnel, 176.

Corresponding week, 1921:

Machines, 30; Passengers, 49; Crews, 48; Total personnel, 97.

Corresponding week, 1920:

Machines, 8; Passengers, 10; Crews, 10; Total personnel, 20.

Croydon Notes.

There is not much of note to record of Croydon during the last week except the departure of the S.O.S. to which reference is made elsewhere.

Both the other Hercules piloted by Mr. Wolley Dod and Mr. Hinchliffe respectively, reached Cairo on Christmas day. Mr. Hinchliffe, who joined Mr. Wolley Dod at Malta, flew ahead of him from this point and reached Cairo an hour or so before Mr. Dod.

Lt.-Col. Minchin took delivery of Mr. Lowenstein's 3-Lynx Fokker on Monday and brought it to Croydon. So far he has made one return trip to Brussels on the machine.

The pilot of the A.N.E.C. monoplane, to which reference was made last week, tells one that he did fly, as a matter of fact, for 400 yards, but did not go further as he had no confidence in the engine. This machine, it will be remembered, performed well at Lympne a year or more ago.

One takes this opportunity of wishing all and sundry at Croydon a happy Christmas (post-dated) and an exceedingly successful New Year.—G. D.

THE WAKEFIELD GOLD MEDAL.

As announced recently, Sir Charles Wakefield has presented a gold medal to the Institution of Aeronautical Engineers to be awarded annually to the designer of the apparatus or invention which, in the opinion of the Council of the Institution, tends most towards making flying safer.

Those who wish to enter such apparatus or inventions for consideration by the Council are hereby advised that they must send in full particulars accompanied by drawings and an indication where and when the apparatus can be seen, not later than Jan. 15, 1927.

The contest is open to members as well as non-members of the Institution. All claims should be sent to the Acting Honorary Secretary, Mr. N. J. Hulbert, at 34, Broadway, Westminster, S.W.1.

THE GOLD MEDAL OF THE F.A.I.

At the Conference of the Fédération Aéronautique Internationale held in Paris on Dec. 16-17 the F.A.I. Gold Medal for the year 1926 was awarded to Sir Alan J. Cobham for his flight from England to Australia and back.

Thirteen countries were represented at the Conference, six of which put in claims for the F.A.I. Gold Medal in connection with performances carried out by their respective countrymen.

Great Britain was represented by Lieut.-Col. M. O'Gorman and H. E. Perrin.

A.O.F.B. NEWS.

Owing to the fact that a highly secret engine is now being fitted to a not so secret aeroplane, there is some talk of conferring on Mr. A. V. Roe the honorary title of Grand Typhoon.

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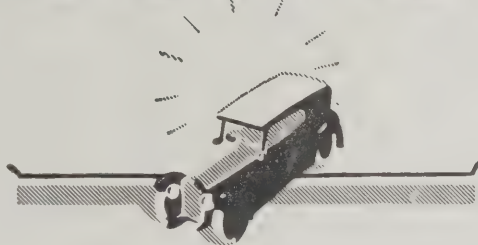
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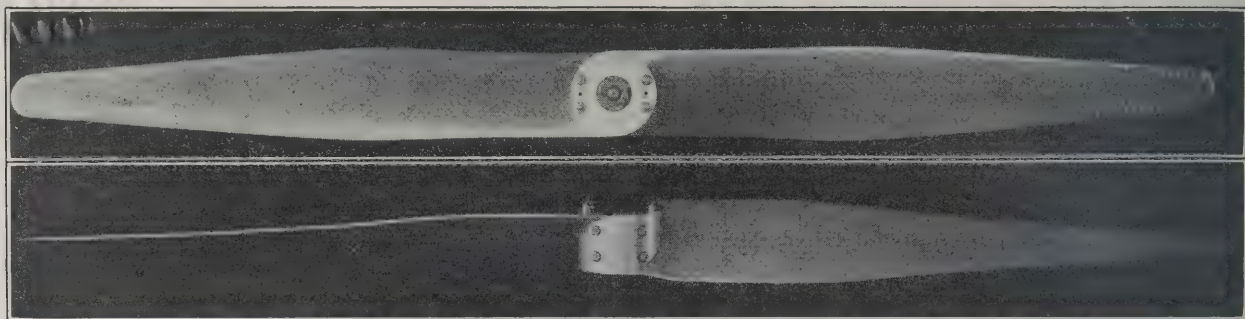
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THE SHORT METAL AIRSCREW.



Some months ago in an article describing a visit to the works of Short Bros. at Rochester, mention was made of a new type of metal airscrew which had been developed by this time. It is now permissible to describe and illustrate this new development.

The Short metal airscrew is of the now well-tried thin-bladed light alloy type, but, unlike others of this type, the blades are separate units joined together at the boss.

Each blade is made from a slab of duralumin, milled or otherwise machined to the required blade sections, and twisted to give the required approximately helical form. The requisite number of blades for each screw are then united by a form of "halved joint" in such a way that the inner sections of the blade assume the correct pitch angle.

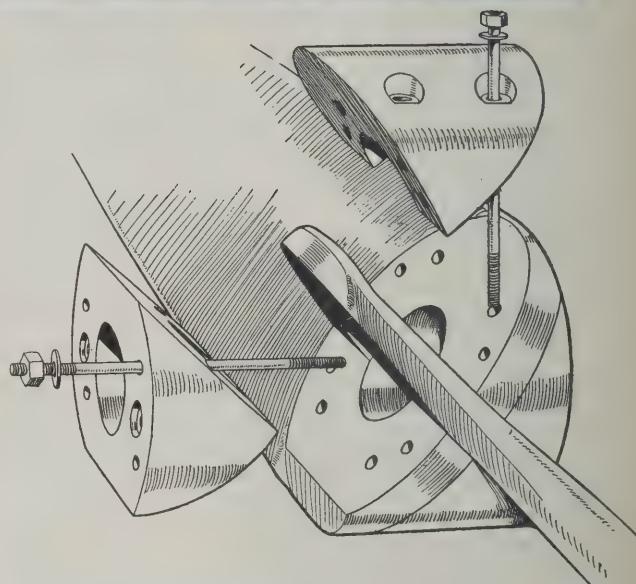
In the ordinary case of a two-bladed airscrew the root of each blade is slotted to a depth of one-half the boss diameter, and the two blades are then assembled so that a part of each blade enters the slot in the other. The blade roots are thus approximately at right angles one to another, and no sudden bending of the blade material at the boss is therefore necessary.

Angular blocks of light alloy are fitted into the four spaces between the two interlaced blades to form a boss, and the whole assembly is then divided centrally for the airscrew hub, and for a series of thorough-going bolts which lock blades and boss together firmly.

This method of construction has a number of distinct advantages. The use of separate blades makes the system applicable to airscrews having more than two blades, and a four-bladed type is now being designed.

A damaged blade may be replaced independently of the other components of the particular airscrew, and for transport the assembly may be dismantled and packed in a very much smaller space than would be required for a single piece airscrew. This advantage is particularly marked in the case of multi-bladed screws.

Tests made with an airscrew of this type on the Short Mussel two-seater light seaplane, which is fitted with an A.D.C. Cirrus engine, have shown an all-round improvement in performance over that attained with the most satisfactory wooden airscrew yet tried on that machine. The improvement amounts to some three miles per hour in top speed, and there is a notable increase in efficiency over the whole speed range of the machine.



THE SHORT METAL AIRSCREW.—At the top the screw is seen in its complete state, in front and side elevation. Above, Mr. Bridgman's sketch shows how the blades and the angle-blocks are assembled. Below, the component parts are seen laid out.

THE RESPONSIBILITIES OF A PILOT.

Air Ministry Notice to Airmen No. 83 of 1926 states:—

With reference to Notice to Airmen No. 17 of the year 1926 and to the Air Navigation Directions, 1926 (A.N.D.6), para. 49 (1) (i) (a) of which stipulates that a safety belt must be carried in all flying machines for each person (including the pilot) carried in an open cockpit and that such equipment must be maintained in working order, the attention of pilots is drawn to the necessity for ascertaining before flight that the belts are properly secured in all cases.

When a seat is unoccupied the safety belt should be so fastened as to avoid the possibility of fouling the controls.



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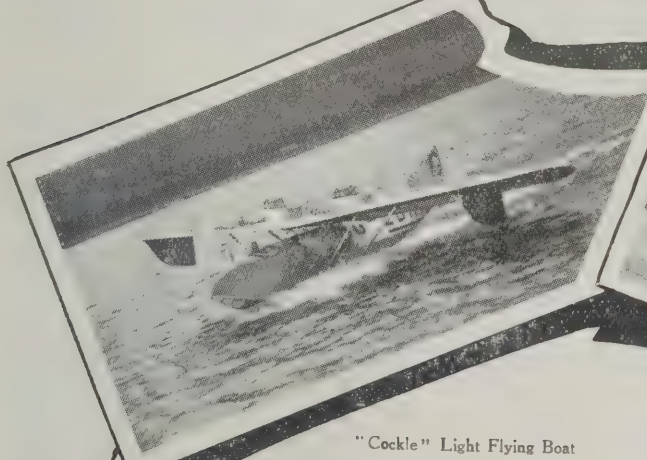
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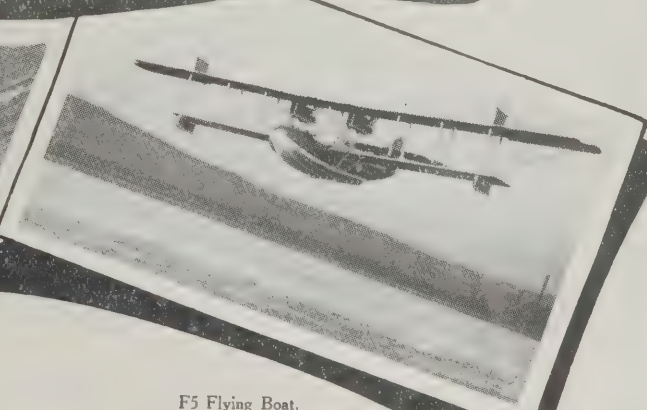
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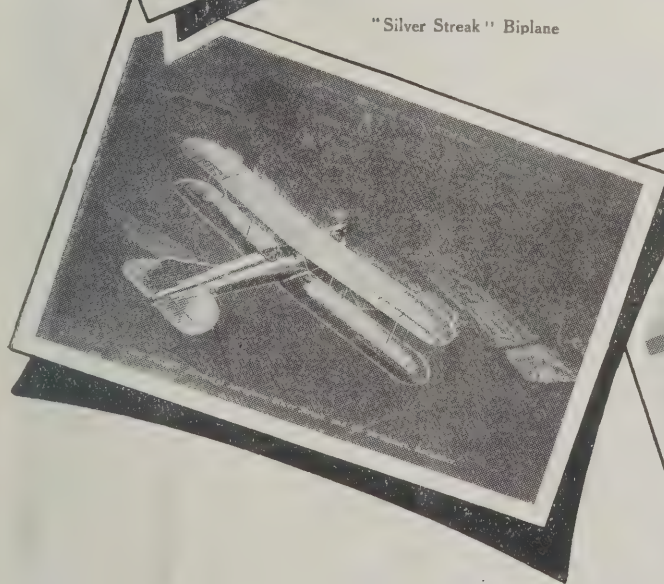
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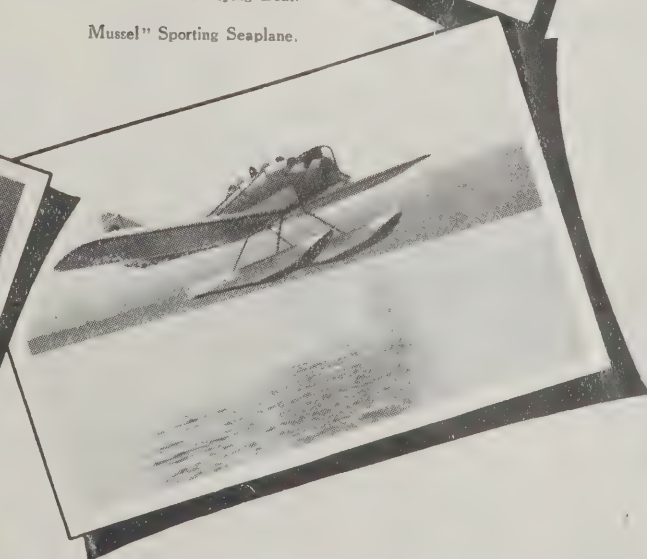
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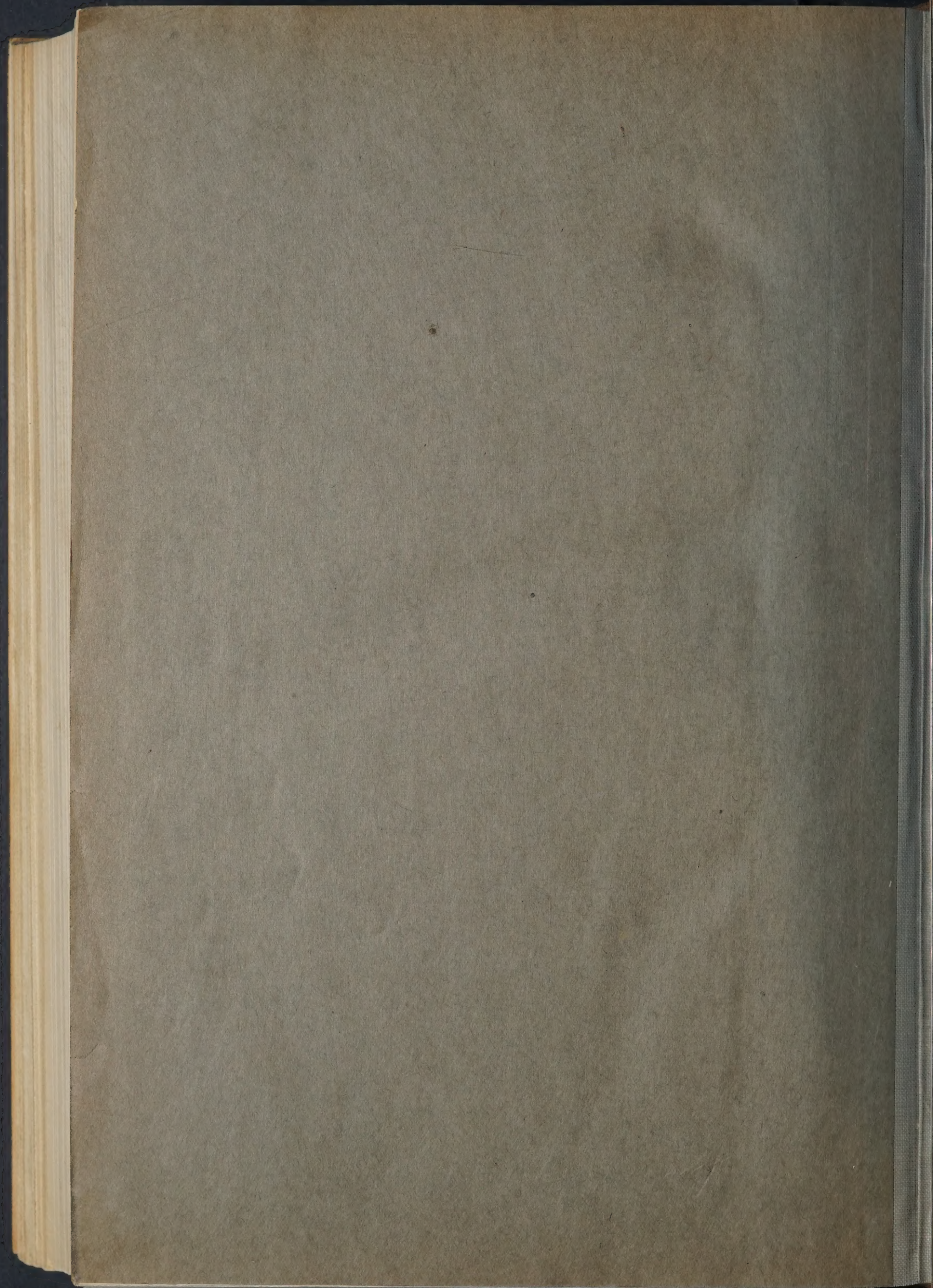
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